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THE AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, FINANCE,

INSURANCE, BANKING, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

SATURDAY, MARCH 24, 1860.

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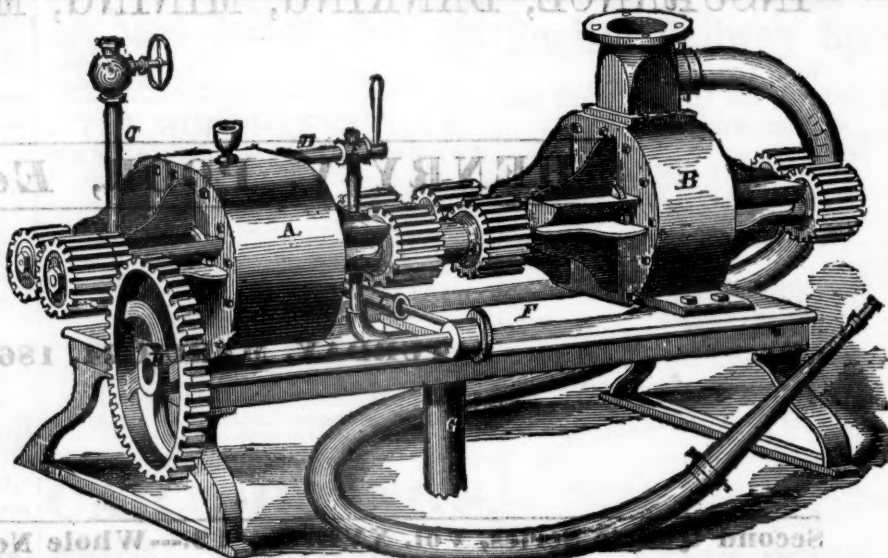
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SATURDAY, MARCH 24, 1860.

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & CO. No. 9 SPRUCE ST.

New York, Saturday, March 24, 1860.

Atlantic, Tennessee and Ohio Railroad.

We observe in the Charlotte, N. C., *Whig* a call for the second instalment of \$5 per share on the 17th prox. The first instalment, of a like amount, was called for on the 16th of January last, which was very generally responded to. Some years ago, the friends of this enterprise obtained charters from the States of North Carolina and Tennessee with the view of building a road from Charlotte, via Statesville, N. C., and Jonesboro', Tenn., to the Ohio river, thus connecting the great Northwest by a very direct line with the Atlantic ports of North and South Carolina. Within the past year, this company has been organized, and the work of construction commenced. The portion of this road to which attention is particularly directed at this time, is that which lies between Charlotte, N. C., the northern terminus of the Charlotte and South Carolina Railroad, and Statesville, a point on the western extension of the North Carolina Railroad, running from Salisbury to Ashville, and comprehending a distance of about 45 miles.

From the favorable character of the country over which this road will pass, being on the ridge between the fertile valleys of the Yadkin and Catawba rivers, and from the estimates of the engineers, together with the actual lettings of the grading of the first 22½ miles, at \$28,000, or a little over \$1,200 per mile, it is thought that the road can be built at a cost not exceeding \$450,000. It being a virtual extension north of the Charlotte and South Carolina Railroad, that company, seeing the immense extent of fertile country which the building of this road will open up to it, and the consequent increase of business which will be likely to accrue from it, will doubtless find it to their interest to contribute largely towards its construction.

(For the American Railroad Journal.)

Victoria Bridge.

(Continued from p. 243.)

The estimate given in the report of Mr. Stephenson as the cost of the piers, is £800,000 sterling, or \$4,000,000.

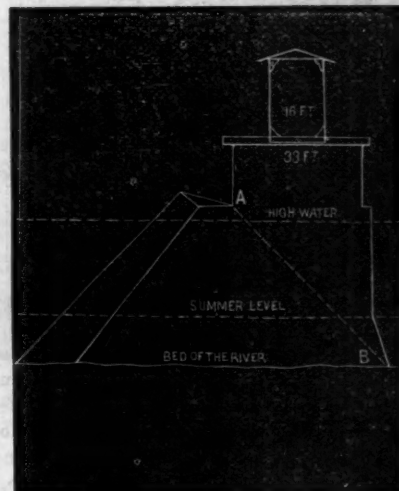
Mr. Ross states that about 55 per cent. of the entire cost, or about \$2,200,000, is incurred before laying the first foundation stone. This would leave \$1,800,000 as the actual cost of the masonry. The total amount is represented to be about 60,000 yards, which would make the cost per yard, £6, or \$30.

In considering any saving to be made simply by a modification of the dimensions of the piers, we have to deal, therefore, with the sum of £360,000, which, it appears, was their cost independent of items which, with the exceptions of slight reductions, would be common to small piers. The dimensions of these piers were 16 feet in thickness on the top, with the exception of the centre piers, which were 24 feet thick.

The piers are built with a batter, which gives them considerably increased dimensions on the bottom. The length on top—that is, the length of bridge seat—is 33 feet. In relation to this, Mr. Ross says in his report: "Next, as to the piers, it is alleged that their depth is greater than necessary. This, it appears, is on the assumption that they are 39 feet deep in the shaft. A reference to the accompanying diagram disproves this statement; the depth, you will perceive, is only 33 feet. The tube requires a bearing surface of 21

feet. We have, therefore, only 6 feet on each side. The idea of any reduction, therefore, at once falls to the ground."

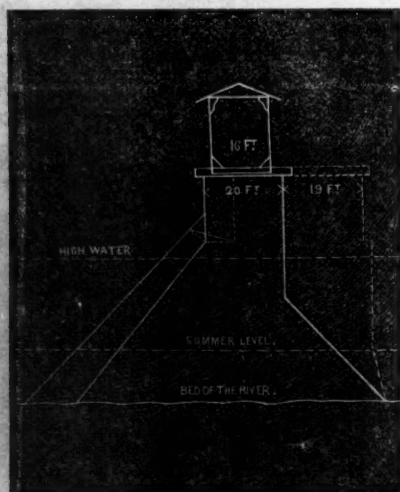
The inquiry which first suggests itself to the mind of an American engineer is, what is the necessity for a bridge seat, or bearing surface of 21 feet, for a bridge only 16 feet wide? (the width of the tubes;) and the next is, what is the necessity for 6 feet on each side additional? The whole length of bridge seat is, in fact, 17 feet more than the width of the tubes, or more than double. If we take a side view of one of these piers, with an end section of the tube resting upon it, the appearance presented justifies my simile of the pyramid supporting the mouse. See following diagram.



The piers project out 8½ feet on each side. I am aware that these spaces, or portions of them, are covered with a sloping or shed like projection of iron, the actual necessity for which may be doubted; and if this additional length of 17 feet of masonry is necessary to support them, and they in their turn are a necessary and indispensable part of a tubular bridge, the extra length of pier may be an important item of comparison, when contrasting the cost of tubes with the cost of other superstructures; for I know of no other, where the necessity for such projections is involved. That this extra length is not considered necessary even by Mr. Ross to the capacity of the pier to

withstand the ice, I assume to be the case; for if it had been added for that purpose, it cannot be doubted he would have said so. He merely says: "The tube requires a bearing of 21 feet, we have, therefore, only 6 feet on each side."

Simply for the purpose of withstanding the pressure of the ice, it is believed that if the whole top of the pier were removed down to the line marked A B in the diagram, leaving a side view similar to a section of a pyramid, there would not be the slightest fear of failure. It requires no argument to demonstrate that it could not be overturned endwise by any action of ice against its upper slopes; and that the upper courses of masonry, of such character, would not be disturbed, is proved by the example of the revetment wall in part of the city, where, although jams of ice have taken place of such magnitude as to be forced 10 feet above the top of the wall, into the street, and against the buildings on the opposite side, not even a coping stone has been disturbed. It may be concluded, then, that all the masonry above *this line is useful only for the purpose of sustaining the superstructure*, and that all that was necessary was a length of 20 feet, giving a slight berm outside the tubes. The remainder might, for all practical purposes, have been dispensed with. A still further reduction might have been made without changing the position of the line A B, by moving the whole top of the pier about 6 feet, until it met the lines of the upper end slopes, as shown in the following diagram:



This change, with the reduction of the useless width on each side, would have taken 19 feet off the down stream end, at the top, running down to a wedge at the bottom of the pier, and giving precisely the same base that it now has, while, in its stead, it would only have added 6 feet to the up stream end of the top, above the level of the ice breaker. The saving from this modification alone, which, I admit, would not in the slightest degree have impaired the capacity of the pier to resist the ice, would have reduced the amount of masonry 12,000 yards, which, at Mr. Ross's calculations of its value, would amount to £72,000, or \$360,000.

All the argument that Mr. Ross brings to bear upon this point is "the idea of any reduction at once falls to the ground," because we have now only a little more than twice the bearing that the tubes require. To be sure, the amount was small—only a trifle over a third of a million of dollars!

and of course it could not be expected that Mr. Ross would waste a great deal of time upon so trivial an amount.

So far as the experience of American engineers extends, the modified form I propose would present a far more effective barrier to the ice than the one adopted. With the latter form, any "shove" of ice which should reach above the top of the slope, would find a resting place, until it could pile up against the tubes, while, with the former plan, upon reaching the top of the slope it would meet a perpendicular face which would turn it back upon itself, thus forming a barrier for the protection of the pier. That my hypothesis is correct, is proved by an incident related by Mr. Logan, in a paper read before the Royal Geographical Society, in 1842, and which is also quoted in Mr. Liddel's reply to Mr. Brunel. "A few years before the erection of the revetment wall at Montreal, a merchant was tempted by the commercial advantages of the position, to build a large cut-stone warehouse by the river side. The ground floor was not more than eight feet above the summer level of the river. When the ice barrier, or bridge, was formed, the usual rise of the water inundated the lower story, and the whole building becoming surrounded by a frozen sheet, a general expectation was entertained that it would be prostrated by the first movement. But the proprietor had taken a very simple and effectual precaution against this. Just before the rise of the waters, he securely fixed against the side of the building, at an angle less than 45°, a number of stout oak logs, a few feet asunder. When the movement came, the sheet of ice was broken and pushed up the incline thus formed, at the top of which meeting the wall of the building, it was reflected into a vertical position, and the pieces falling back on each other, such an enormous rampart of ice was in a few minutes placed in front of the warehouse, as completely shielded it from all danger. In some years the ice has piled up nearly as high as the roof of the building."

Mr. Stephenson, upon the question of a saving of masonry, by reducing the size of these piers, chooses to assume, in his report, that all suggestions had reference only to dispensing with the sloping ice breakers, preserving the rest of these enormous piers intact, and proceeds to argue seriously the difference in cost between these fractional portions of the piers, and the cost of the crib work shoes proposed by Mr. Keefer to meet a special case, which Mr. Stephenson, in his argument, terms *ordinary* ice breakers. He says: "To convey some idea of the magnitude of *ordinary* ice breakers, placed on the upside of the pier, and to enable you to form some notion of their cost, I cannot do better than quote the following." He then proceeds to Mr. Keefer's description of these shoes, which is concluded in these words: "Their application to the sides of the piers is with especial reference to preventing the ice from reaching the spring of the arches, which will be the lowest and most exposed part of the superstructure if wood be used." The inference to be drawn from Mr. Stephenson's language is that these are the *ordinary* ice breakers used by American engineers, and that the ashler piers of the Victoria Bridge, with their up stream ends, sloped and sharpened, embodied a *new* idea on this side the Atlantic.

Aside from this, the unfairness of the comparison is evident, when the simple cost of so many yards of masonry in these up stream ice breakers, irrespective of the cost of coffer dams and other appliances, which Mr. Ross estimated to cost 55 per cent. of the whole piers, is placed in comparison with the crib work shoes proposed by Mr. Keefer, one important purpose of which was to avoid these expenses. In fact the shoes were the only coffer dams required.

Beyond this comparison, to which I shall again have occasion to refer, Mr. Stephenson does not say a word *pro* or *con* about any saving to be made by shortening the piers or reducing their thickness. And Mr. Ross in figuring up the saving to be made by taking off the ice breakers, and comparing this with the cost of Mr. Keefer's cribs, says the amount of masonry saved, would be exactly 20,000 cubic feet, and he makes the amount a trivial one by applying a valuation of 2s. 6d. per foot deducted, by a very singular calculation. 1st. He says the total cost of piers and foundations is £800,000. 2d. That in laying the first stone 55 to 60 per cent. of the whole cost is incurred. 3d. That there is, therefore, but 2s. 6d. left for the remainder; i. e., the remainder of the stone. The total being £800,000, 55 per cent. being set aside for the "first stone," we have according to my knowledge of arithmetic, £360,000 for the rest of the stone. As the whole is represented to amount to 60,000 yards, and as the "first stone," in its cubic contents, bears a very small proportion to this amount, we may disregard it. We have, therefore, 60,000 yards of masonry to be constructed for £360,000. This is at the rate which I have elsewhere stated, viz: £6 per cubic yard. As a cubic yard contains 27 cubic feet, the rate would be nearly 4s. and 6d. per foot, instead of 2s. and 6d. A very important difference. Certainly comparisons made in matters of this kind, upon the result of which depends the expenditure of such enormous sums, should not rest upon such loose statements as these.

Mr. Brunel seems to have labored under the same delusion as regards the novelty of sharpened ashler piers in America. He says in his report, "engineers in the north of the American Continent have had much experience in the construction of *ice fenders*, and have, I believe, constructed many in various ways, with great ingenuity and skill, of various degrees of strength, according to the necessities of the case, and the materials at hand; and no doubt many of them have succeeded admirably, or at least are said to have done so; but at best these have been but rough expedients intended to add to the security of some existing works, cleverly adapted to the peculiar position in which they were placed, or intended to meet any very probable contingency, and capable of being strengthened or repaired if they should prove weak or become partially damaged by any unusually severe winter. By the reports of the American engineers themselves it is evident they treat the *ice fenders*, generally, as *provisional* works, thrown up to protect others, and calculated by themselves to require renewal or repair. This mode of treating them does not for the reasons I have given seem to me fitted for the present case."

All this will no doubt be news to American engineers, who have not read Mr. Brunel's report. Upon the 20,000 miles of railways in our northern

States and in Canada, and among the thousands of bridges which have been constructed, I will venture to say that not one in fifty of any consequence, where piers have been needed, and ice was to be resisted, have been built without ashler piers, and with the up-stream ends sharpened and sloped for that purpose. True, they are sometimes faced up with a wooden sheathing strongly bolted to the masonry, but this is more particularly the case where the masonry is laid without cement. These ice breakers, or ice fenders, as Mr. Brunel terms them, have not been merely separate rough provisional expedients, but as a rule, with a few unimportant exceptions, have been inherent parts of the piers themselves.

I might instance the bridge across the Connecticut River at Springfield, built by Major Whistler in 1840, for the Western Railroad; the bridge across the same river on the Hartford and Springfield road; the bridge across the Delaware on the New York and Erie road; the bridge across the Susquehanna at Harrisburg, and many others, constructed long before the Grand Trunk Railway Co. had an existence; and later still upon that road—the bridges across the Richelieu and St. Francis Rivers. This however is foreign to the subject, and I only mention it to show a specimen of one among the many wonderfully new ideas claimed for the Victoria Bridge.

In regard to the dimensions of the piers, Mr. Brunel says: "Mr. Stephenson has already I know recommended that the length of the piers should be reduced at the base about 6 or 7 feet, and at the top about 13 feet. I believe this will effect a saving of not less than £60,000 or £70,000, and I fully concur in the opinion of the safety and feasibility of the reduction." But Mr. Stephenson says nothing of this, and Mr. Ross says the idea of a reduction at once falls to the ground. It would appear, therefore, that if Mr. Stephenson did recommend it, it was not carried out.

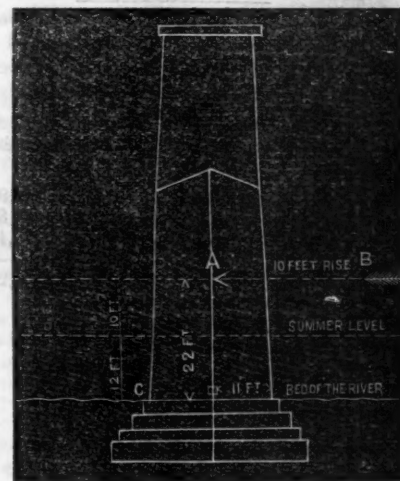
Mr. Brunel is correct in one part of the statement, in regard to the ice fenders, viz: that American engineers have had much experience in the erection of structures designed to resist the action of the ice, and one among the important conclusions to which their experience has led them is, that as much is to be feared from making their piers too thick, as making them too thin. As a rule for any but extraordinary cases, they have determined that the dimensions of the top are more dependent upon the bridge seat, which the peculiar superstructure they may adopt will require, than upon any other condition; and that, generally, with a batter on each side of $\frac{1}{2}$ to $\frac{3}{4}$ of an inch to a foot, the base will be sufficient. Additional base when thought necessary may be obtained by increased batter. For instance a pier of 60 feet in height upon which the bridge required a bearing of 10 feet, would, with a batter on each side of an inch to the foot, have a thickness at bottom of 20 feet. They have found also that if a pier have a length on the bottom between the point of the ice breaker and the "heel" which will enclose a verticle section of a pyramid, its sides having a slope of 40° , and its apex reaching to the highest level at which ice is to be resisted, it is of dimensions sufficient to resist almost anything in the form of ice which will strike it, in the direction of its length; provided it be of suitable masonry, thoroughly laid in ce-

ment, and well doweled and clamped, and the end presented to the ice has a slope of 40° . Such a pier cannot be moved longitudinally by ice, for the ice, if not parted by the ice breaker, will slide up the slope and go over before it will move or overturn it. Mr. Keefer says "that the ice is not, as is often remarked, 'irresistible,' may be proved from the fact that the islands, rocks, wooden wharves and stone quays have not been removed by it." The power required to crush a cubic foot of ice is much less than that required to crush stone, iron or wood. If, therefore, there is mass enough, the ice is broken into fragments or ground into powder. The simple expedient he says is "to turn the ice back upon itself and leave the first arrivals to take the shock of all that follows after." By sloping the up-stream face of a pier, so that the ice will ride upon it, the stability is increased by the additional weight piled upon it, and a heavy rampart of ice receives all further assaults. We may conclude then that so far as the longitudinal strength of the pier is involved, not the slightest necessity exists for the depth in the shaft with which they have been constructed, and that unless they are subjected to severe lateral "shoves," creating a pressure tending to overset them sidewise, the enormous thickness given them is also superfluous.

Can any such pressure occur at this point? All descriptions of the ice phenomena in the St. Lawrence concur in their conclusions as to the causes of the lateral shoves opposite the city—viz: that the deep and comparatively still water below the Current St. Mary closing first, arrests the floating ice coming down from above. This is not arrested by a broad margin of ice extending across the river at right angles, but in a sharp pointed space of open water where the current "tails off" into the still water. The accumulation of floating ice in this space piles up in a mass of broken fragments which partially congealing together forms a wedge which remains stationary until the escape of the water under it is so obstructed as to back the water and raise it above. The head finally becomes so great that this wedge is driven forward forcing the ice on each side in immense piles against the revetment wall in front of the city, and against St. Helen's Island opposite. This effect is sometimes produced for some distance down the river by the continued movement of this immense wedge, and the ice has been known to pile up at the Longueuil terminus of the railroad, so as to endanger the buildings which are placed above high water level, although this terminus is on a sort of bay or eddy, on the south shore of the river, under the lee of St. Helen's Island. That no conditions exist at the bridge site, or in its immediate vicinity, which could possibly create such effects as these, is quite clear. These wedge-like accumulations can only be formed at the foot of a rapid or current where it "tails off" into deep water while the bridge is at the head of the Sault Normand, and at the foot of Laprairie basin, where there are no "arresting features." It is quite clear then, the piers could not be subjected to any lateral shoves as are here described, and which are beyond question the most formidable of the phenomena of the ice movement. The only lateral pressure, then, which could ever possibly be brought against the piers, would be from floating fields of ice, broken off from the bordages above,

as described by Mr. Keefer, which are brought down by the current of the basin, to add to the accumulation below—and these could not exert any serious pressure of the kind to be feared unless they were of the exact size necessary to fill the space between any two piers, and of great depth. In this event their effects are not so much to be measured by their area, thickness and velocity, as by the capacity of ice to resist pressure without crushing. It appears clear, from all the descriptions, that such fields of ice could not be brought down with any force after a dam had been formed by a jam of ice below so as to raise the water to any considerable extent; for, as previously explained, when the water is dammed back the current is so lessened as to allow the whole expanse of the Sault and the basin above to become frozen over. It is only, then, previous to the dams being formed, and when the water is low, that any action of this kind upon the piers from floating ice is to be expected, and this of course must be low down near the base. Mr. Keefer states "when a sufficient quantity (of ice) has been sent down to raise the level of Laprairie basin 10 feet, the current therein is so diminished as to become frozen over, and then all further supply is cut off."

This, we may take it, is then the highest point at which floating ice would strike the piers, viz: about 10 feet above summer level. If we take the depth of summer water at 12 feet, we shall then have the point of pressure created by floating ice at 22 feet from the bottom. The top of the highest piers, excepting perhaps the large piers at the centre, is about 70 feet above the bottom. The thickness at the top being 16 feet, and the batter being assumed at $\frac{1}{2}$ inch per foot, the thickness at bottom would be 22 feet. The section would be nearly as shown in the following diagram:



This section we are to overturn by a force applied at A in the direction B A, or we are to move it bodily sidewise. The whole mass being cemented, doweled and clamped together, is a monolith, and it is quite evident that no movement of the latter kind could take place without moving a large area of the bed of the river which surrounds it. If any effect, therefore, is produced by the force at A, it must be to overturn it, upon some point below as a fulcrum. Let us assume this to be at C, on the level of the bed of the river. It will be near enough for all practical purposes to consider the pier as containing 2,000 yards above

this level, weighing 4,600 tons, which, with the weight of the bridge resting upon it, would give 4,875 tons as the weight acting vertically upon the point D at the middle of the base. Then A D C may be considered a bent lever, with its fulcrum at C. The two arms of the lever would be A D 22 feet, and D C 11 feet. It would, therefore, require a force equal to one-half the weight, or 2,437½ tons, disregarding the cohesion of the cement on the line C D. If we call the pier 80 feet long at this point, its width being 22 feet, the area will be 1,760 feet. The tenacity of best Rosendale cement, two parts cement to one of sand, when well set, is 40 lbs. per square inch, or 5,760 lbs. per square foot; but if we estimate it at only 4,000 lbs. or two tons per square foot, we have 3,520 tons as the additional resistance due to this, requiring an additional power of 1,760 tons to overturn the pier—or a total in all of 4,197½ tons, disregarding any additional strength which might be given by iron clamps and dowels. The whole length of the pier at the level of the line A B is about 65 feet. A sheet of ice, therefore, two feet in thickness, would be subjected to a crushing force of over 32 tons for every square foot of its edge in contact with the pier; or if 5 feet thick to a force of nearly 13 tons per square foot before it could exert any pressure to be feared. It is needless to say that any such pressure would crush the most solid sheets of ice like an egg shell. But solid sheets of such thickness are not formed. If any masses of such depth are brought down the current, they are composed of broken fragments piled up together, and only partially congealed. A slight obstacle serves to crush them, and besides as the specific gravity of ice is but little less than water, such masses would be nearly submerged, and the actual central line of impingement would be at a lower point, so that the pier would present increased resistance.

(To be continued.)

Charlotte and South Carolina Railroad.

The annual meeting of the Charlotte and South Carolina Railroad Company was held at Columbia, February 8th, at which the annual reports were presented. The earnings from operations of the road during the fiscal year ending December 31, 1859, were—

From Passengers.....	\$108,990 84
"Freights.....	166,866 28
"Mails, express, etc.....	23,426 89
	\$294,284 01

The expenses were:

Maintenance of way.....	\$42,274 89
Conducting transportation.....	31,297 41
Motive power.....	21,058 33
Maintenance of cars.....	7,288 96
Machine shops.....	17,520 60
Loss and damage.....	3,355 83
	\$122,795 53

Extraordinary expenses..	13,869 00
	136,664 52

Net receipts.....\$157,619 49
This sum is chargeable with \$28,000, the interest due on the company's bonds July 1, 1859, and Jan. 1, 1860; 6½ per cent. of dividends on the capital stock, payable at the same periods; the redemption of \$25,000 of bonds maturing Jan. 1, 1860; and \$600 applied to the purchase of real estate—leaving a surplus in the treasury of about \$30,000.

The extraordinary expenditures embrace all

disbursements, such as improvements on roadway, superstructure, equipments, etc.

A comparison of the income of the past with the previous year, shows an increase of \$11,020 21, from all sources; a diminution on freight of \$6,324 09, and an increase on travel of \$14,103 08. This loss has been on down freights—the number of bales of cotton transported being only 50,032, nearly 4,000 less than the former year, while the gain has been on through travel.

The roadway and track are in good condition. The business has been done with comparative freedom from accident; not once during the year has a passenger or freight car or engine been thrown from the track. No accident has happened during the past four years resulting in the slightest injury to any passenger. One locomotive has been purchased during the year. The company will require during the spring 300 or 400 tons of new rails, also a passenger coach, and should the business continue to increase, it may be necessary to purchase another locomotive. The number owned by the company is 14.

The number of miles run was 200,576, at a cost of 60.8 cents per mile. This is a decrease from the previous year of 12,379 miles, although the amount of business has been greater. The report says:

"The policy of the board of directors in conducting the affairs of the company has been conservative; for while the property and road have been gradually and constantly improving, its bonded debt (the only debt it now owes) will soon be reduced \$49,500. This will have been paid out of its earnings for the past two years—after paying to the stockholders a fair dividend, and still leaving over a balance for each year. And while the present state of the treasury, and the general condition of the property cannot but be regarded as sound, with an annually increasing business, we may look confidently to the future success of the road. It occupies a commanding position; penetrates a fertile, agricultural country, abounding in wealth, and an intelligent and enterprising population, and leads to the best markets of the south, which must ensure it a permanent local business, while its direction is favorable to the reception of a large through travel."

This road is 109 miles in length, commencing at Charlotte, N. C., the southern terminus of the North Carolina Railroad, and running thence, via Chester and Winnsboro', to Columbia, S. C., the eastern terminus of the Greenville and Columbia, and the northern terminus of the Columbia branch of the South Carolina Railroad. This branch is 68 miles in length, and joins the main line at Branchville, S. C., 62 miles from Charleston, and 75 from Augusta. But two links are wanting to constitute it a portion of one of the great thoroughfares between the northeast and southwest, viz: from Danville, Va., to some point on the North Carolina Railroad, and from Columbia to Augusta, Ga. The Dan River Coal Field Railroad, which has been commenced with a view of connecting the Danville with the North Carolina Railroad at High Point, will shorten the time between Columbia and Richmond three hours, and will supersede the necessity of the Danville connection, which has been so long unwisely refused by the Legislature of North Carolina. In regard to the Augusta connection, a charter exists, and the country is regarded as favorable for its construction. The distance is but 70 miles, by means of which the passenger will save four or five

hours. The cities of Columbia and Augusta, as well as the inhabitants along the line, and every road from Augusta south, and from Columbia north, have a direct interest in it. A road is now in actual process of construction from Charlotte north to a connection with the western extension of the North Carolina Railroad, at Statesville. It is 45 miles between these points. The grading upon 22½ miles has already been let, and the whole road to that point will doubtless be urged to a speedy completion. It is eventually to be extended via Jonesboro', Tenn., to some point on the Ohio river.

INCOME ACCOUNT.

	Dr.		Cr.
To balance Dec. 31, 1858.....	\$116,769 15	Operating road.....	\$136,664 52
"earnings to Dec. 31, 1859.....	284,350 06	Payments on dividends.....	74,153 25
"receipts from other sources.....	6,864 03	Interest on bonds.....	25,847 50
Interest account.....	3,069 92	Fifty bonds of the company.....	25,000 00
Five bonds of the company.....	2,500 00	Construction account.....	600 00
		Due by agents, connecting roads, etc.	45,451 43
		Cash in treasury.....	105,826 46
			\$413,543 16

The directors elected at the annual meeting, were: Wm. Johnston, A. B. Davidson, J. H. White, J. A. Young, A. B. Springs, Samuel McAliley, H. C. Brawley, E. G. Palmer, W. R. Robertson, A. R. Taylor, John Fisher and John Caldwell.

President—WM. JOHNSTON.

Treasurer—C. BOUKNIGHT.

Superintendent—T. J. SUMNER.

California.

We learn from the San Francisco Mercantile Gazette that an important bill, contemplating the liquidation of outstanding State indebtedness, had been introduced in the Senate by Mr. Merritt, of Mariposa, and referred to a select committee. It provides that all persons holding any legal or equitable indebtedness against the State, may, prior to August 1, 1860, but not subsequent to that date, present the same for payment at the Treasurer's office. The following are specified as the claims which are entitled to be received and liquidated under this act:

Civil bonds of the State issued under the funding acts, passed in the years 1851, '52, '53, '55 and '56, which are now outstanding and unpaid, with interest on the same to date of payment as appears by the coupons. Comptroller's warrants drawn under sanction of law for civil expenses prior to January 1, 1857, and now outstanding and unpaid. Certificates of balance issued by the Treasury Department in bonding any debt, and now outstanding and unpaid, as appears by the records. Claims against the State which accrued prior to January 1, 1857, and which have been, or may be audited and allowed by act of Legislature. Civil bonds of the State issued under act of April 28th, 1857. The Governor, Treasurer and Comptroller are constituted a Board of Examiners to receive all propositions made under this act, and award payment to the lowest bidder. The Treasurer of State is to advertise for sealed proposals, to be opened at the Capitol August 1, 1860, for the surrender of any indebtedness specified in this act, which advertisement shall state that \$250,000 is appropriated to redeem said indebtedness, and the said Board accept the lowest pro-

posals at rates not exceeding par value as may redeem the greatest amount of indebtedness until the \$250,000 is exhausted. The sum of \$250,000 is appropriated for the payment of any claims offered for liquidation agreeably to this act.

On the 9th Feb., in response to proposals for the redemption of \$75,000 of the City Bonds of 1851, the amount of \$24,500 was surrendered to the Commissioners of the Funded Debt at 105 and interest. The largest amount surrendered by one party was \$14,000.

The report of the State Treasurer, for the month of January, 1860, shows the following condition of the Treasury at the close of that month:

Balance on hand, Dec. 31, 1859 \$402,462 98
Received from all sources during Jan. 529,858 06
Total.....\$932,260 99
Disbursements.....133,045 77

Cash on hand, January 31, 1860.\$799,215 22

The amount of funds on hand at the commencement of business, Feb. 13, was \$767,469 21.

Macon and Brunswick Railroad.

This company was organized February 4, 1859, the requisite amount of subscriptions to the capital stock having previously been obtained, and steps were immediately taken to procure a competent engineer, with a view to the location of the line, which resulted in the selection of Maj. E. McNeill, by whom the preliminary survey was made in 1857. The engineer department was organized, and the location commenced in April, and completed early in June. The line, as located, commences at Macon, where it forms a common junction with the Macon and Western, and South-western railroads, and runs thence, in a south-easterly direction, through the counties of Bibb, Twiggs, Pulaski, Telfair, Montgomery, Appling, Wayne and Glynn, to its intersection with the Atlantic and Gulf railroad, three-fourths of a mile below the Initial Point. The whole length of the line is 175 miles.

The amount of stock subscribed at the time of the organization was about \$500,000—by individuals, and by the corporations of Macon and Brunswick. The larger portion having been subscribed by the people at each end of the road, and in the counties of Twiggs and Pulaski; and the sum not being sufficient to warrant the placing of the whole line under contract, the board determined so to dispose of the means in their hands, as to confer the greatest individual benefit on the subscribers, and at the same time best subserve the general interests of the company.

With this view, two sections only were placed under construction, viz: the Northern division, commencing at Macon, and extending 37½ miles, to a point on the Dublin road, 9½ miles from Hawkinsville; and the southern division, commencing at the intersection of the road with the Atlantic and Gulf road, and extending 29 miles to Hazlehurst, on the Brunswick and Florida road—comprising in both 66½ miles.

The subscriptions to the stock of the company were paid in notes, and bonds of the cities of Macon and Brunswick, due, one-half in January, 1860, and the balance in January, 1861—the contractors receiving the stock, notes and bonds at par in payment for the grading and superstructure, in equal parts of those due in 1860 and 1861. By this means, individuals were enabled to subscribe more largely, and the work be progressing

while the notes were maturing. Thus far it has been found to work remarkably well. The grading, bridging and superstructure have been let at fair prices to experienced and responsible parties, they taking one-fourth to one-third in the stock of the company. The work is progressing fairly. The above subscriptions are exclusive of those in the counties of Appling, Telfair and Montgomery, which it is thought advisable not to expend, until reaching those points.

We understand that a purchase has been made of 1,700 tons of iron, sufficient to lay about 35 miles of track. It is expected to arrive about the middle of June, at which time the track will be in readiness to receive it; and should no unforeseen accident occur, the cars will be running at least 30 miles by the 1st of October next. The road thus far has been built with greater rapidity than any other ever constructed in Georgia.

The following statement exhibits the total cost of each division, and the amount of stock taken in payment for the same by the contractors:

	Total.	Stock.
North'n Div.	\$204,548	\$56,838
South'n "	83,533	20,883

It is thought that these two sections, completed, in operation and paid for, will be fully sustained by the business done over each, even though the work upon the middle division should be deferred for any length of time.

The estimated cost of the whole road is as follows:

Northern Division	\$420,172
Southern "	231,640
Middle "	1,084,800
Building and fixtures.	49,000
Furniture	341,100
5 miles of siding.	50,000
	\$2,176,712

The capital stock of the company at the date of the report Feb. 3, 1860, was \$565,525.

The assets of the company consisted of—

Bills receivable	\$181,487 48
Subscription of City of Macon	200,000 00
" " Brunswick	5,000 00
" Contractors	77,500 00
" Individuals	5,000 00
Cash paid out	\$17,867 52
" balance on hand	33,670 00
	51,537 52
	\$565,525 00

The office of the company is at Macon, Ga.

The officers are:

President—A. E. COCHRAN.
Chief Engineer—MAJ. E. MCNEIL.
Principal Assistant Engineer—A. N. ROGERS.
Treasurer—A. B. DICKINSON.

Pennsylvania Railroad.

We learn that THOS. A. SCOTT, Esq., has been elected Vice President of this Company, to fill the vacancy occasioned by the death of Wm. B. Foster, Jr. Mr. Scott was General Superintendent of the road at the time of his promotion; and is succeeded in that capacity by Mr. ENOCH LEWIS. Mr. Lewis was superintendent of the middle division of the road under the general superintendency of H. J. LAMBAERT, Esq., prior to the promotion of the latter to the Auditorship of the company. It will be recollected that the present able president of the company, J. EDGAR THOMSON, Esq., was its Chief Engineer prior to his election to the position he now occupies.

Illinois Southern Railroad.

We learn from W. J. Stevens, Esq., of Vincennes, that work on the Cairo and Vincennes road—incorporated as the "Illinois Southern Railroad,"—is proceeding with such vigor as to promise an early completion. The track is graded from St. Francisville, Ill., to a point near Carmi, thirty odd miles, and the white oak cross-ties for this section are mostly distributed. From Carmi to Vincennes, a distance of nine miles, the grading is now being done. Mr. CROSSWELL, the Chief Engineer of the work, acting with Judge WILKINSON, President of the company, has accepted the proposition of the McCallum Bridge Co., of Cincinnati, for building a bridge across the Wabash river below Vincennes.

—Cin. Com.

Copper From Lake Superior.

We have received the following statement from Mr. R. H. Rickard, No. 21 Nassau street:

SHIPMENTS OF COPPER FROM LAKE SUPERIOR FOR 1859.

	Net tons.	Estim't'd perc'age.		Net tons.	Estim't'd perc'age.
Eagle River.			P'tage Lake.		
Cliff Mine...1,254	71		Huron Mine.	7	76
N. Am. Mine	8	74	Mesn'd Mine	1	60
Phoen. C. M.	32	85			
Eagle Riv. M.	5	76	Total...1,573		
Total...1,301			Ontonagon.		
Eagle Harbor.			Minn'sota M.	1,633	74
Cop. Falls M.	342	78	R'ck'd Mine	349	75
Central Mine	173	75	Nat'lal Mine	323	80
N. West Mine	69	74	Advent're M.	138	73
Conn. Mine.	18	76	Ogima Mine.	35	68
Summit Mine	4	70	Ev'g'n B. M.	27	68
Total...607			Norw'h Mine	22	70
Copper Harb.			Aztec Mine.	15	70
Clark Mine..	3	70	Nebraska M.	9	71
Portage Lake.			Toltec Mine.	9	73
Isle Roy'e M.	240	74	Boh'mian M.	3	70
Quincy Mine	335	55	Ridge Mine.	27	73
P'w'bic Mine	772	70	Mass Mine..	12	70
Fr'klin Mine	207	55	Superior M..	1	71
Port'ge Mine	9	76	Hamilton M.	1	70
			Total...2,610		

RECAPITULATION.

	Net tons.		Net tons.
Eagle River.....	1,301	Eagle Harbor.....	607
Ontonagon.....	2,610	Copper Harbor...	3
Portage Lake.....	1,575		
Total.....	6,095		

Wilmington, Charlotte and Rutherford R.R.

We learn from the Wadesboro' Argus that the prospects of this enterprise were never brighter than at present. The Argus says:

The company employ on the eastern end quite a large force; some engaged in keeping up the road already laid, some in laying track, some in building trestle, and the largest force in grading the unfinished section below Lumberton. As soon as this latter force finishes in Robeson, it will move up to Richmond and continue its labors until it reaches the Pee Dee. The company have also as strong a force at the Pee Dee bridge as can well work on it. The railroad to take the rock from the quarries to the bridge site is nearly complete—the flats to convey the rock to the piers in the river are nearly ready. The machinery for raising the rock is now on the way, and the whole work will be most expeditiously done, the state of the water and weather permitting. A force of one hundred hands will shortly be put to grading the heavy sections between Charlotte and the Union Co. line; and for the grading through Anson and Union counties, reliance is placed on the citizens of the two counties. The President promises to carry off our cotton crop of 1861; if our people will have the grading finished by the time the Pee Dee bridge is ready. We also learn that track-laying will commence on the western end about the 1st of April, and by the end of the year will probably reach Shelby, fifty-four miles from Charlotte.

RAILROAD SHARE LIST, including Mileage, Rolling Stock, etc., etc.

An asterisk (*) occurring in the column headed "Rolling-Stock," signifies that the cost is included in that of "Railroad and Appurtenances." A dash (—) signifies "nil." Running dots (.....) signify "not ascertained." Land-Grant Railroads are in *italics*.

Years ending.	Railroad.				Equipment.			Companies.	Abstract of Balance Sheet.										Earnings.			
	Main Line.	Lateral and Branch Lines.	2nd Track and Sidings.	Road in progress or projected.	Engines.	Passenger.	Freight, etc.		Property and Assets.			Liabilities.				Total, incl. all other assets and liabilities.	Road operated, incl. road leased, etc.	Mileage run by locomotives with trains.	Gross.	Net.	Dividends.	Price of shares.
									Railroad and Appurtenances.	Rolling-Stock.	Invested in foreign works.	Share Capital paid in.	Bonded and Mortgage Debt.	Floating Debt.								
	M.	M.	M.	M.	No.	No.	No.		\$	\$	\$	\$	\$	\$	\$	M.	M.	\$	\$	P. c.	P. c.	
ALABAMA.																						
30 Jun. '99	43.3			72.3	3	2	19	Alabama and Florida	1,086,278	*		539,396	473,500	101,205	1,127,174	27.3		59,430	22,359			
28 Feb. '99	30.3			58.1	2	2	19	Alabama and Mississippi	461,505	30,991		335,010	109,500	21,632	518,965	30.3		55,791	31,852			
31 May '99	99.2			68.4	7	7	84	Ala. and Tennessee Rivers	2,101,007	144,549		1,064,915	713,226	212,496	2,264,468	99.2	76,133	155,628	78,997			
30 Jun. '99	57.0			171.3				Mobile and Girard	1,500,000							67.0	236,791	76,773	21,006			
1 Jan. '99	319.2	14.7		213.0	25	18	361	Mobile and Ohio	7,252,801	681,859	114,894	3,441,859	4,051,547	726,546	8,360,702	202.0	372,300	769,787	420,000			
28 Feb. '99	88.5	28.4		295.8	20	14	272	Montgomery and West Point	1,819,403	279,435	100,000	1,419,672	922,621	18,966	2,462,492	116.9		446,153	211,880	6		
16 Dec. '99				26.1				Tennessee and Ala. Central	728,000			105,760										
ARKANSAS.																						
30 Nov. '99	38.5			107.5				Cairo and Fulton	553,877	*		351,524	446,000	10,725	511,949							
30 Sep. '99	22.5			41.8				Memphis and Little Rock	1,547,100			791,100	756,000		1,547,100			211,420	115,076			
CALIFORNIA.																						
31 Jan. '99	23.9				3	6	30	Sacramento Valley	333,237	49,773		279,050	85,000	3,502	404,622	23.9		56,044	20,618	6		
30 Sep. '99	122.4			75.1	16	20	250	Danbury and Norwalk	3,903,455	302,511		1,936,740	1,510,500	319,443	4,328,922	122.4	246,523	333,500	162,777			
31 Aug. '99	61.4	10.6						Hartford, Provid. and Fishkill	3,108,018	254,000	102,889	2,350,000	964,000	16,463	3,932,432	72.0	314,763	723,400	204,134	10	127	
31 Dec. '99	74.0				11	19	212	Hartford and New Haven	2,438,847		8,559	2,000,000	278,500	76,675	2,555,837	159.0		271,278	66,330			
31 Dec. '99	57.0				7	15	178	Housatonic	1,578,301	*		1,031,800	437,500	30,713	1,706,802	67.0		199,536	314,068			
30 Nov. '99	62.3							Naugatuck	1,470,661		11,050	738,538	750,000		1,488,538	60.1		76,758	8,946			
31 Dec. '99	46.4	8.8						N. Haven, N. London and Ston.	1,400,000			922,500	500,000		1,481,723	65.2		158,652	loss.	5		
30 Nov. '99	68.0				5	5	167	New Haven and Northampton	1,561,241		5,453	510,900	1,055,600	272	1,575,147	66.0	91,134	104,404	30,512			
31 Mar. '99	62.2			63.8	29	72	368	N. Lond., Willimant. & Palmer	4,579,879	661,547		3,000,000	2,219,000	33,038	5,582,431	74.0	432,024	828,092	315,832	3		
31 Mar. '99	59.0	7.0						New York and New Haven	2,245,406	176,792		2,522,300	324,130	69,614	2,599,672	66.0		265,417	44,587			
DELAWARE.																						
31 Dec. '99	71.0			19.4				Norwich and Worcester	1,146,311	*		252,561	735,000	123,750	1,146,311	71.0		66,628				
30 Nov. '99	14.3							DELAWARE.	669,514		25,000	762,320			767,278	14.3		19,896				
FLORIDA.																						
30 Apr. '99	154.2			45.1				Newcastle and Frenchtown	292,291	*		317,847	164,000	70,620	543,237							
30 Jun. '99	81.3	2.0		28.6	2	1	24	Florida and Alabama	396,310	23,608		205,781	204,900	164,670	594,836	19.3		10,255	1,504			
30 Sep. '99	26.5	3.0		227.0				Florida and Alabama								29.4						
GEORGIA.																						
31 July '99	86.7				15	11	106	Atlanta and La Grange	1,179,381	*		1,000,000	187,500	23,384	1,459,075	86.7		362,061	197,357	8	125	
30 Sep. '99	30.0			133.5				Atlanta and Gulf-M. Trunk	1,032,200			733,700	298,500		1,032,200	63.0		125,427	69,679			
31 Dec. '99	57.0							Augusta and Savannah	755,000	*		151,887				31.0						
30 Apr. '99	43.5			23.7				Brunswick and Florida	3,750,000		826,171	3,750,000	106,267		5,977,106	229.0	790,030	1,633,947	839,604	10		
30 Nov. '99	191.0				54	28	636	Central of Georgia	4,174,492	*	829,550	4,150,000	373,000		7,368,668	232.0		1,154,621	544,363	8	100	
31 Mar. '99	171.0	61.0			18	16	171	Georgia (and Bank)	1,500,000	*		1,438,800	23,000	7,101	1,967,776	102.5	213,180	375,250	209,785	11	102	
30 Nov. '99	102.5				7	2	107	Macon and Western	774,244	162,534		669,950	249,000		1,026,868	60.0		202,714	110,516	8		
31 July '99	60.0				3	4	33	Muscogee	1,386,634	52,373		1,275,901	10,200	180,621	1,473,140	71.6						
1 May '99	68.1	56.6		14.8	15	16	136	Savannah, Albany and Gulf	3,165,000	*		2,254,000	631,000		4,419,000	147.2	171,758	547,876	337,769			
31 July '99	106.1			44.3	52	24	705	South Western	5,901,497							138.0		832,343	454,541			
30 Sep. '99	138.0							Western and Atlantic	10,000,000			3,500,000	4,500,000		10,000,000	220.0						
30 Apr. '99	138.0				62	31	990	Chicago, Alton and St. Louis	6,068,054	1,400,872	680,158	4,629,340	2,990,000		8,149,084	210.0		1,044,573	171,515		56	
31 Dec. '99	45.0				6	14	101	Chic. Burlington and Quincy	1,799,894	87,869	120,000	762,865	188,085	2,050,065	45.0	14 mo.	243,282	135,284				
30 Jun. '99	138.0			75.0				Chicago and Milwaukee				988,000	762,865									
30 Jan. '99	181.8				58	67	960	Chicago and North Western	6,776,119	*	175,165	5,603,000	1,397,000	5,651	7,543,104	228.4		1,407,846	629,029	65		
10 Nov. '99	33.2							Chicago and Rock Island	580,000	*		580,000			580,000	84.0						
31 Dec. '99	121.0	138.5	73.6		60	63	1,369	Galena and Chicago Union	8,027,473	1,311,917	211,003	6,026,400	3,783,015	292,466	10,300,517	326.5	808,231	1,547,561	620,328	4	62	
31 Dec. '99	175.0				113	96	2,305	Great Western	5,022,926			1,600,000	3,088,426	334,500	5,022,926	175.0						
31 Dec. '99	454.8	252.5		81.5				Illinois Central	19,674,214	3,347,709		10,249,210	20,000,000	1,297,277	31,596,487	708.3		1,976,578	556,624	62		
—	148.0							Illinois River	4,870,586	*		1,780,295	3,292,403			148.0						
—	46.6							Ohio and Mississippi					600,000			oper by Chic.	& R. Is.	125,000				
—	180.0			129.0				Peoria and Bureau Valley	5,400,000	*		1,569,889	2,200,000			186.0						
31 Dec. '99	100.0							Peoria and Hannibal	1,978,555	*		800,000	1,200,000		2,000,000	100.0	oper by Chic.	Bur. & Quincy.				
—	1.0							Peoria and Oquawka								oper by Chic.	& R. Is.	823,767				
31 Dec. '99	168.5	39.8	12.2		31	30	424	Quincy and Chicago	7,008,958	628,487		3,026,903	5,035,615	741,040	8,865,262	208.3						
INDIANA.																						
—	108.0							Terre Haute, Alton & St. Louis	2,080,433	*		1,196,679	1,006,125			108.0						
31 Aug. '99	29.0			73.0				Cincinnati and Chicago	2,233,413		2,750	986,061	1,219,100	51,772	2,283,748	109.0		249,867	119,432			
1 Jan. '99	72.4				19	21	278	Cincinnati, Peru and Chicago	1,666,280	244,081	25,641	611,050	1,166,000	47,850	2,111,059	109.0		368,189	132,094	6	58	
31 Dec. '99	89.8	20.2			23	19	313	Evansville and Crawfordsville	2,497,952	540,043	25,689	1,689,900	1,362,284	140,689	3,458,108	110.0		448,858	230,834	9	38	
31 Dec. '99	84.0							Indiana Central	1,904,956	*	10,000	835,971	1,025,200	19,719	2,109,236	84.0		232,905	92,589			
31 Aug. '99	78.0							Ind., Pittsburg and Cleveland	1,839,578	*		1,014,252	681,000	99,400	2,000,000	108.0		222,737	74,328			
—	64.0							Jeffersonville	1,850,000	*		1,000,000	600,000		2,000,000	64.0						
—	86.0	49.0						Lafayette and Indianapolis	2,984,516	*		1,647,700	1,336,816			135.0		202,114	82,632			
—	288.0							Madison and Indianapolis	6,000,000	*		2,800,000	3,000,000	2,000,000	6,000,000	288.0						

RAILROAD SHARE LIST, including Mileage, Rolling Stock, etc., etc.

An asterisk (*) occurring in the column headed "Rolling-Stock," signifies that the cost is included in that of "Railroad and Appurtenances." A dash (—) signifies "all Running dots (.....) signify "not ascertained." Land-Grant Railroads are in *italics*."

Years ending.	Railroad.				Equipment.			Companies.	Abstract of Balance Sheet.										Earnings.				
	Main Line.	Lateral and Branch Lines.	2nd Track and Siding.	Road in progress or projected.	Engines.	Cars.			Property and Assets.				Liabilities.				Total, incl. all other assets and liabilities.	Road operated, incl. road leased, etc.	Mileage run by locomotives with trains.	Gross.	Net.	Dividends.	Price of share.
						Passenger.	Freight, etc.		Railroad and Appurtenances.	Rolling-Stock.	Invested in foreign works.	Share Capital paid in.	Bonded and Mortgage Debt.	Floating Debt.									
M.	M.	M.	M.	No.	No.	No.		\$	\$	\$	\$	\$	\$	\$	\$	M.	M.	\$	\$	P. c.	P. c.		
MAINE.																							
31 Dec. '58	32.0	—	—	6.0	4	25	Androscoggin	645,271	*	—	145,787	511,500	—	—	—	32.0	22,001	30,957	17,263	—	—		
31 May, '59	55.0	—	—	—	9	10	128	Androscoggin and Kennebec	2,210,947	*	27,925	457,900	1,748,457	101,209	2,307,566	137.0	78,186	281,929	89,768	—	—		
30 Jun. '59	149.0	—	25.0	—	41	17	349	Atlantic and St. Lawrence	6,066,375	857,566	—	2,494,900	3,472,000	9,572	5,976,472	149.0	429,791	545,741	150,228	0	—		
31 Dec. '58	12.5	—	—	—	4	2	45	Bangor, Oldtown and Milford	175,232	*	—	135,000	—	—	175,516	12.5	25,437	33,059	16,530	—	—		
31 Dec. '58	63.0	9.0	—	—	12	11	109	Kennebec and Portland	2,871,264	*	—	1,107,526	1,763,738	—	—	72.5	169,240	145,074	70,740	—	—		
31 Dec. '58	—	—	—	—	—	—	—	Penobscot	308,413	*	—	180,000	143,678	—	—	—	—	—	—	—	—		
31 May, '59	54.7	—	—	—	4	10	93	Penobscot and Kennebec	1,611,413	104,019	78,014	555,228	1,206,800	128,576	1,890,604	54.7	oper. by An.&K.	oper. by	67,324	—	—		
31 May, '59	51.3	—	—	—	11	13	118	Portland, Saco and Portsmouth	1,494,792	*	5,208	1,500,000	—	—	1,500,000	51.3	141,664	208,299	104,029	6	92 1/2		
31 May, '59	37.0	—	—	—	—	—	—	Somerset and Kennebec	783,763	*	—	169,200	556,600	—	—	37.0	—	55,408	28,404	—	—		
31 May, '59	18.5	—	—	—	33.5	—	—	York and Cumberland	1,090,000	*	—	370,000	450,000	270,000	1,000,000	18.5	—	—	—	—	—		
MARYLAND.																							
30 Sep. '59	279.6	7.2	—	—	235	124	3,272	Baltimore and Ohio	21,225,164	3,576,251	3,606,740	10,111,800	13,881,833	292,426	30,278,377	286.8	3,648,814	3,618,618	1,033,621	—	68 1/2		
30 Sep. '59	30.0	—	—	—	7	33	167	Washington Branch	1,650,000	*	—	1,650,000	—	—	1,824,806	39.0	187,427	442,219	268,540	—	100		
31 Dec. '58	138.0	4.0	—	—	42	38	1,465	Northern Central	6,943,457	733,934	220,966	2,200,000	5,395,800	655,507	8,081,567	154.5	606,482	810,504	364,649	—	144 1/2		
MASSACHUSETTS.																							
30 Nov. '59	21.2	2.0	—	—	6	4	80	Berkshire	500,560	100,000	—	600,000	—	—	601,360	oper. rat. by Housat.	—	42,000	—	7	—		
30 Nov. '59	26.8	1.8	43.6	—	21	26	566	Boston and Lowell	2,245,247	183,345	—	1,830,000	—	—	2,671,887	28.0	352,512	531,477	208,798	—	90		
30 Nov. '59	74.3	8.8	51.3	—	30	43	560	Boston and Maine	3,846,683	373,057	105,937	4,076,974	—	5,365	4,523,400	83.1	540,372	860,119	394,475	—	107 1/2		
30 Nov. '59	47.0	7.0	22.3	—	22	27	210	Boston and Providence	2,952,600	207,400	70,000	3,160,000	174,220	—	3,063,138	54.0	316,522	654,673	337,648	—	106 1/2		
30 Nov. '59	44.6	24.0	59.2	—	30	56	380	Boston and Worcester	4,291,164	437,416	100,000	4,500,000	500,000	29,595	5,751,512	83.7	511,046	1,067,071	311,525	—	105 1/2		
30 Nov. '59	46.1	1.1	2.7	—	7	10	109	Cape Cod Branch	907,761	123,864	—	681,690	190,000	39,499	1,092,268	47.2	79,456	118,728	49,374	—	105		
30 Nov. '59	60.0	2.4	8.9	—	12	13	381	Connecticut River	1,614,385	187,558	—	1,591,100	252,500	—	1,928,384	75.4	177,164	271,592	139,223	—	4 1/2		
30 Nov. '59	44.1	30.5	24.4	—	55	46	368	Eastern	4,134,575	456,424	250,000	2,853,400	2,030,500	60,510	4,944,409	120.7	426,161	693,409	325,805	—	87		
30 Nov. '59	19.9	1.3	3.6	—	—	—	—	Essex	742,592	4,416	—	299,107	280,261	197,428	776,796	oper. rat. by Eastern	—	11,663	—	—	—		
30 Nov. '59	60.9	16.8	70.9	—	29	28	655	Fitchburg	3,190,851	350,149	—	3,540,000	100,000	—	3,869,729	67.7	341,503	659,485	297,450	—	99		
30 Nov. '59	14.0	2.4	—	—	8	3	37	Fitchburg and Worcester	293,658	40,226	—	214,296	62,900	800	333,884	26.4	37,245	48,768	12,796	—	98 1/2		
30 Nov. '59	24.9	—	—	—	—	—	—	Hampshire and Hampden	577,582	—	—	298,951	303,014	57,065	653,080	oper. r. by N. H. & N. H.	—	28,791	—	—	—		
30 Nov. '59	12.4	—	—	—	2	3	27	Lowell and Lawrence	332,883	30,275	—	200,000	100,000	—	383,158	oper. r. by B. and L. I.	—	12,550	—	—	—		
30 Nov. '59	14.6	—	—	—	12	12	324	Nashua and Lowell	658,929	95,683	—	600,000	—	—	698,563	30.0	158,374	229,205	68,510	—	—		
30 Nov. '59	20.2	1.0	—	—	7	16	146	New Bedford and Taunton	494,843	52,644	—	500,000	—	19,800	564,707	21.8	55,881	143,261	26,264	—	—		
30 Nov. '59	26.9	—	—	—	6	9	44	Newburyport	585,272	63,696	—	220,240	221,600	211,693	653,533	36.0	75,866	51,338	14,087	—	104 1/2		
30 Nov. '59	8.6	—	—	—	—	—	—	N. York and Boston Air Line	673,302	—	—	223,176	675,000	2,853	901,029	8.4	20,888	22,531	—	—	—		
30 Nov. '59	79.5	7.8	25.6	—	27	46	368	Old Colony and Fall River	3,025,445	334,503	—	3,015,100	134,500	60,900	3,380,269	87.3	410,591	646,755	306,413	—	104		
30 Nov. '59	13.6	—	—	—	1	2	1	Pittsfield and North Adams	432,430	11,247	—	450,000	—	—	450,000	13.6	32,480	48,355	17,000	—	—		
30 Nov. '59	43.4	1.0	14.9	—	12	14	384	Providence and Worcester	1,506,977	254,566	—	1,510,200	300,000	—	1,810,200	44.4	216,327	341,886	136,386	—	105		
30 Nov. '59	16.9	—	—	—	3	3	1	Salem and Lowell	366,987	82,543	—	243,305	226,900	316	470,521	oper. r. by B. and L. I.	—	17,500	—	—	—		
30 Nov. '59	11.5	—	—	—	2	7	17	South Shore	462,187	39,426	—	259,685	153,290	2,821	513,112	11.5	26,026	58,784	15,463	—	97		
30 Nov. '59	21.9	—	—	—	—	—	—	Stockbridge and Pittsfield	448,700	—	—	448,700	—	—	451,000	oper. r. by Housat.	—	31,490	—	—	—		
30 Nov. '59	11.1	—	—	—	7	18	144	Taunton Branch	478,048	—	—	385,226	210,000	9,854	614,060	oper. r. by T. and B.	—	5,333	—	—	—		
30 Nov. '59	61.1	—	—	—	36.5	—	—	Troy and Greenfield	3,309,622	207,343	—	2,214,225	1,003,880	—	3,516,865	77.0	107,478	246,798	106,317	—	134 1/2		
30 Nov. '59	69.0	—	—	—	72	47	1,149	Western (incl. Alb. & W.S. etc.)	9,934,566	1,095,713	—	5,150,000	6,125,520	208,726	13,457,921	192.0	1,020,054	1,767,068	830,148	—	110		
30 Nov. '59	150.1	17.3	106.8	—	10	8	149	Worcester and Nashua	1,187,935	140,962	—	1,141,000	194,500	862	1,403,409	45.7	179,460	216,444	94,244	—	56		
MICHIGAN.																							
1 Jan. '59	17.3	—	—	—	2.7	2	1	100	Bay de Noquet and Marquette	—	—	—	—	—	—	—	—	—	—	—	—		
30 Sep. '59	57.0	—	—	—	—	—	—	Chic. Detroit & Can. G. T. Junc.	built and	equipp	ed by G. T. R. R. Co. of Canada	—	—	—	—	—	—	—	—	—	—		
1 Jan. '59	188.0	—	—	—	—	—	—	Detroit and Milwaukee	8,270,623	647,596	—	2,329,155	4,707,500	—	—	9,008,369	188.0	365,038	144,270	—	—		
MINNESOTA.																							
31 May, '59	284.0	—	—	—	98	123	1,528	Grand Rapids and Indiana	12,847,238	—	1,149,069	6,057,840	8,284,063	119,089	14,548,411	320.0	—	2,417,915	886,697	—	41 1/2		
1 Mar. '59	246.0	203.0	—	—	91	135	976	Mich. S'th'n & N'th'n Indiana	14,517,892	1,607,006	1,312,534	8,975,400	9,343,000	—	816,460	19,595,407	539.0	2,019,425	777,273	—	8 1/2		
MISSISSIPPI.																							
31 May, '59	284.0	—	—	—	98	123	1,528	Michigan Central	12,847,238	—	1,149,069	6,057,840	8,284,063	119,089	14,548,411	320.0	—	2,417,915	886,697	—	41 1/2		
1 Mar. '59	246.0	203.0	—	—	91	135	976	Mich. S'th'n & N'th'n Indiana	14,517,892	1,607,006	1,312,534	8,975,400	9,343,000	—	816,460	19,595,407	539.0	2,019,425	777,273	—	8 1/2		
MISSOURI.																							
30 Nov. '58	12.0	—	—	—	65.8	1	—	Cairo and Fulton	281,645	9,200	—	50,493	327,000	50,892	128,386	12.0	—	239,585	117,371	—	—		
30 Aug. '59	206.8	—	—	—	—	—	—	Hannibal and St. Joseph	10,147,007	814,301	—	1,770,612	8,768,000	—	10,961,308	206.8	14 mo's.	497,269	235,321	—	—		
31 Oct. '58	168.8	—	—	—	68.0	—	—	North Missouri	5,396,527	235,994	—	2,620,000	3,250,000	48,006	6,018,106	168.0	—	250,159	—	—	—		
PLATE COUNTY.																							
28 Feb. '59	163.0	10.0	—	—	119.0	26	412	Pacific	8,621,659	614,782	—	3,330,657	8,203,000	754,837	12,238,494	162.0	—	676,310	301,503	—	—		
31 Oct. '58	19.0	—	—	—	264.0	—	—	South-Western Branch	1,226,010	66,974	—	1,400,000	—	—	—	—	—	—	—	—	—		
31 Oct. '58	86.5	—	—	—	—	—	—	St. Louis and Iron Mountain	4,916,189	283,869	—	1,999,300	3,276,000	171,103	5,446,403	86.5	—	152,371	—	—	—		
NEW HAMPSHIRE.																							
31 Mar. '59	23.1	8.2	—	—	—	—	—	Ashuelot	506,000	—	—	246,018,											

RAILROAD SHARE LIST, including Mileage, Rolling Stock, etc., etc.

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Years ending.	Railroad.				Equipment.			Companies.	Abstract of Balance Sheet.							Earnings.				Dividends.	Price of shares.			
	Main Line.	Lateral and Branch Lines.	2nd Track and Siding.	Road in progress or projected.	Cars.				Property and Assets.			Liabilities.				Balance Total, incl. all other assets and liabilities.	Road operated, incl. road leased, etc.	Mileage run by loco. motives with trains.	Gross.			Net.		
					Engines.	Passenger.	Freight, etc.		Railroad and Appurtenances.	Rolling-Stock.	Invested in foreign works.	Share Capital paid in.	Bonded and Mortgage Debt.	Floating Debt.	Gross.				Net.			P. c.	P. c.	
																								No.
New York.																								
30 Sep. '58				140.0				Albany and Susquehanna	227,356			275,793			8,697									
30 Sep. '58	32.9		3.3		5	12	53	Albany, Vermont and Canada	1,557,502	136,038		439,005	1,575,099		50,000		32.9	93,894	84,119	11,215				
30 Sep. '58	38.5		34.0					Albany and West Stockbridge	2,286,044			1,000,000	1,289,984				ope	r. by Western.			6			
30 Sep. '58	34.9	2.6		73.6	4	6	39	Black River and Utica	1,153,069	81,405		804,648	662,000		52,570		37.5	34,424	60,524	32,413				
30 Sep. '58	14.8		1.6					Blossburg and Corning	496,661			250,000					14.8	16,530	23,554	9,204	5			
30 Sep. '58	142.0		13.6	18.5	28	32	386	Buffalo, New York and Erie	3,150,762		164,200	680,000	2,562,221		252,142	4,206,709	76.0		541,249	172,321				
30 Sep. '58	65.3		18.0		28	34	312	Buffalo and State Line	2,460,251	312,738		1,913,000	1,049,000		172,378		87.8	356,145	614,116	359,609	6			
30 Sep. '58	24.6		38.1					Cayuga and Susquehanna	1,016,058	79,542		687,000	426,000		7,042		34.6	59,539	69,421	5,092				
30 Sep. '58	17.4		2.1					Chemung	400,000			380,000	70,000				ope	r. by N. Y. & E.		24,000	7			
30 Sep. '58	46.8		2.9		10	8	83	Elmira, Canandaigua & N. Falls				352,742	14,000		28,716	396,416	ope	r. by Re.						
30 Sep. '58				63.2				Erie and New York City	287,708			91,839					ope	r. by B. N. Y. & E.						
30 Sep. '58				15.0				Genesee Valley	81,859			175,000	38,500		23,404		17.3	49,519	58,207	10,840	6			
30 Sep. '58	17.3		0.5		5	3	50	Hudson and Boston (West'n)	148,000	27,000		59,374					150.0	700,224	1,842,636	770,096	34			
30 Sep. '58	144.0		106.6		52	107	542	Hudson River	10,205,906	1,182,372		3,758,466	8,842,000		414,644									
30 Sep. '58				73.8				L. Ontario, Auburn & N. York	74,203			75,771												
30 Sep. '58				182.0				L. Ontario and Hudson River	3,497,538	173,320		2,716,186	870,000		115,856									
30 Sep. '58	84.0	2.5	10.1	8.5	18	37	129	Long Island	2,211,656	554,611	1,000	1,552,715	636,997		17,539	2,507,270	101.5	248,123	334,195	147,084	11			
30 Sep. '58	297.8	258.1	313.8		211	237	3,171	New York Central	25,164,200	5,257,077	588,980	24,000,000	14,333,771		40,368,005	655.9	3,945,128	6,200,848	2,791,419		7			
30 Sep. '58	446.0	19.0	282.5		210	133	2,634	New York and Erie	35,320,907		1,311,535	11,000,000	25,260,000		2,141,300	38,401,300	495.0	3,000,369	4,482,149	1,408,537	10			
30 Sep. '58	130.8	2.1	30.9		33	89	430	New York and Harlem	7,308,339	634,777		5,717,100	5,151,287		147,640		152.9	621,747	975,853	358,792				
30 Sep. '58	118.0	3.8	17.7		28	8	417	Northern (Ogdensburg)	4,086,712	702,079			1,494,500				32.1	611,479	410,306	127,013				
30 Sep. '58	35.9		2.2		7	6	44	Oswego and Syracuse	675,215	100,462		386,340	213,500		10,875		75.4	98,686	94,385	44,715				
30 Sep. '58	75.4		2.0		6	4	33	Potomac and Watertown	1,622,646	63,382		663,077	818,500		180,138		46.2	89,368	208,223	33,946	3			
30 Sep. '58	25.2		2.1		5	13	70	Rensselaer and Saratoga	743,977	156,573		610,000	140,000				18.4	32,980	37,280	18,590	2			
30 Sep. '58	18.4		1.3	32.6				Rochester and Genesee Valley	653,539			555,450	150,000		30,417		18.0	17,620	12,025					
30 Sep. '58	18.0		1.0			2	32	Sacketts Harbor and Ellisburg	371,556	17,714		167,455	278,400		66,810		ope	r. by Ken.		30,150	24			
30 Sep. '58	21.0		1.6		2	3	10	Saratoga and Schenectady	480,684			300,000	86,500				64.5	107,506	139,388	32,196				
30 Sep. '58	40.9	6.6	3.9		9	12	84	Saratoga and Whitehall	820,518	74,904		600,000	395,000		5,456									
30 Sep. '58				13.2				Staten Island	40,000			40,000												
30 Jun. '58	11.0							Brooklyn and Jamaica	369,856			284,850	85,000				ope	r. by Long Isl.		37,560	9			
30 Sep. '58	81.3		7.1		13	12	117	Syracuse, Binghampt. & N. Y.	2,857,607			1,200,130	1,500,000		59,418		81.3	148,240	177,627	74,359				
30 Sep. '58	27.2		3.2	7.7	7	4	65	Troy and Boston	1,296,302	125,887		568,297	797,500		231,083		27.2	61,614	125,042	53,289				
30 Sep. '58	6.0		0.1					Troy and Greenbush	258,658	36,073		275,000					ope	r. b. Hud.						
30 Sep. '58	2.1		2.1					Troy Union	732,114			30,000	680,000				96.8	by other Co's.						
31 Dec. '58	96.8		11.0		7	11	298	Watertown and Rome	2,159,295	*	28,000	1,498,500	690,000		85,071	2,278,611	96.8	215,605	397,712	187,000	6			
North Carolina.																								
30 Sep. '58	95.2	2.0						Atlantic and North Carolina	1,850,000	*		1,600,000	400,000				95.2							
30 Sep. '58	233.0							North Carolina	4,235,000	*		4,000,000					233.0							
30 Sep. '58	97.0							Raleigh and Gaston	1,240,241	*		973,300	126,200				97.0		206,917	108,541				
30 Sep. '58	161.0		17.1		22	20	144	Wilmington and Manchester	2,586,238	*	201,500	1,127,511	1,060,000		111,886	2,892,969	171.0		487,043	209,793				
30 Sep. '58	161.9				24	32	144	Wilmington and Weldon	2,869,223	*	107,000	1,340,213	791,055		102,391	3,114,954	171.0	323,069	477,554	235,201	8			
15 Mar. '58				43.0				Western North Carolina	190,793	*		290,212	70,860			864,072								
Ohio.																								
30 Sep. '58								Atlantic and Great Western	613,231	*		866,939	77,294											
31 Dec. '58	118.2				17	12	208	Bellefontaine and Indiana	3,008,919	*	11,000	1,879,370	1,274,828		39,028	3,376,251	118.2		332,226	146,812				
1 Aug. '58	137.0				41	39	508	Central Ohio	5,579,508	922,670	104,133	1,628,356	3,673,500		1,126,458	6,810,432	141.0		597,633	171,356				
31 Mar. '58	60.3				22	28	432	Cine, Hamilton and Dayton	2,648,266	504,892	26,500	2,155,800	1,411,000		32,618	3,650,710	60.3		489,437	249,666	7			
30 Sep. '58	37.0				22	28	432	Cine, and Indianapolis June.									37.0							
1 May. '58	131.8				31.0	16	10	Cine, Wilmington and Zanev.	6,250,841	*		2,441,176	3,032,000		228,975		31.0	304,168	190,745	19,180				
31 Dec. '58	135.4	5.8			42	31	439	Cleveland, Columbus and Cine.	4,087,571	684,955	67,422	4,746,100	38,000		8,242	5,343,275	141.2		1,113,639	575,159	7			
31 Dec. '58	67.0				18.0	10	6	Cleveland and Mahoning	1,920,933			580,000	1,202,300		161,200		67.0		285,140	182,282				
31 Dec. '58	95.4	1.2	37.9		31	39	453	Clev., Painesville & Ashtabula	3,431,732	555,343	541,503	3,000,000	1,667,000		35,500	4,132,301	96.6	402,935	1,111,353	646,057	15			
30 Nov. '58	101.0	102.5			42			Cleveland and Pittsburgh	9,320,288			3,942,368	4,918,325		653,821	9,661,102	203.5	646,413	772,093	332,093	4			
30 Apr. '58	109.2	79.4			32	52	430	Cleveland and Toledo	6,729,056	458,194	258,424	3,343,812	3,842,720		358,606	7,858,918	188.6		798,155	414,456	6			
31 Dec. '58	61.4			53.0	5	6	99	Clev., Zanesville and Cin.	1,574,693			999,673	575,250		632,486		61.5	75,120	88,128	19,763				
31 Dec. '58	72.0			31.0	6	9	103	Columbus and Indianapolis	2,555,000	*		1,800,000	205,000				72.0	144,000	84,000	17,760				
30 Nov. '58	64.5			10.4				Columbus and Xenia	1,376,250	392,909	112,734	1,490,000	290,700		50,500	1,985,539		ope	r. by W. Lit.		170,795	8		
31 Dec. '58	72.0			72.0				Dayton and Michigan	3,746,000			1,620,000	2,126,000				72.0	144,000	124,559	66,779				
31 Aug. '58	36.6				5	3	87	Dayton and Western	890,262	104,912		289,692	700,000		90,482	1,080,174	36.6		125,940	66,253				
31 Aug. '58	16.0				47.0	3	2	1 Day, Xenia and Belpre	890,496			437,8												

RAILROAD SHARE LIST, including Mileage, Rolling Stock, etc., etc.

An asterisk (*) occurring in the column headed "Rolling-Stock," signifies that the cost is included in that of "Railroad and Appurtenances." A dash (—) signifies "nil." Running dots (.....) signify "not ascertained." Land-Grant Railroads are in "italics."

Years ending.	Railroad.				Equipment.			Companies.	Abstract of Balance Sheet.										Earnings.				Price of shares.
	Main Line.	Lateral and Branch Lines.	2nd Track and Siding.	Road in progress or projected.	Engines.	Cars			Property and Assets.			Liabilities.			Total, incl. all other assets and liabilities.	Road operated, incl. road leased, etc.	Mileage run by locomotives with trains.	Earnings.		Dividends.			
						Passenger.	Freight, etc.		Railroad and Appurtenances.	Rolling Stock.	Invested in foreign works.	Share Capital paid in.	Bonded and Mortgage Debt.	Floating Debt.				Gross.	Net.				
M.	M.	M.	M.	No.	No.	No.		\$	\$	\$	\$	\$	\$	\$	M.	M.	\$	\$	p. c.	p. c.			
PENNSYLVANIA, (Continued.)																							
30 Nov. '59	48.0		3.1	99.5	4	4	43	Pittsburg and Connellsville ..	1,501,414	79,396		1,753,864	1,500,000	177,920	3,444,154	60.0		60,438					
30 Nov. '59	467.5		56.3		96	80	1,059	Pittsbg, Ft. Wayne & Chicago ..	13,474,664	1,785,182	91,100	6,265,964	9,356,505	1,806,040	17,628,509	467.5		1,768,993	492,721		39 1/2		
30 Sep. '59	31.0			11.0				Pittsburg and Steubenville ..	1,947,462	*		1,221,277	280,000										
30 Sep. '59	54.0		3.0		7	7	26	Schuylkill and Susquehanna ..	1,258,700	*		1,258,700	97,000		1,355,700	54.0							
30 Sep. '59	9.2	15.3	14.9					Schuylkill Valley ..	573,616	*		568,150			573,616	24.5		34,501	29,604		3 1/2		
30 Nov. '59	28.0	5.0	3.3		4	1	445	Shamokin Valley & Pottsville ..	1,321,847	*		500,000	821,447		1,321,847	33.0		96,227	54,582				
31 Dec. '59	148.0		20.0	140.0				Sunbury and Erie ..	6,393,712	107,252		4,506,920	4,369,070	861,271	10,169,869	148.0							
30 Nov. '59	29.6		3.9		8	3	127	Tioga ..	703,349	85,932		97,550	396,000			29.6		83,072	47,007		6		
30 Sep. '59	28.4	6.5	31.9		4	11	9	Westchester and Philadelphia ..	1,410,638	74,677		682,170	944,169	52,434	1,679,301	26.4		125,597	4,502				
31 Mar. '59	78.0							Williamsport and Elmira ..	3,650,682	380,847		1,500,000	2,361,973	161,272	4,148,920			191,970	96,308		1		
RHODE ISLAND.																							
31 Aug. '58	50.0		2.0		9	13	84	N. Y., Providence and Boston ..	2,158,000	*		1,508,000	306,500		2,158,000	50.0		147,231	208,439	96,571	5		
30 Nov. '58	13.6		0.5			3	5	Providence, Warren & Bristol ..	434,698	1,588		287,917	109,937	36,139		13.6		23,514	23,005	1,278			
SOUTH CAROLINA.																							
31 Dec. '58	13.2	1.5		182.4	2		26	Blue Ridge ..	2,126,539			1,916,515	217,577		2,134,092	13.2							
31 Dec. '58	54.9		47.4		4	3	21	Charlotte and Savannah ..	801,615	34,372	250,000	706,365	195,266	197,905	1,099,536	51.9							
31 Dec. '58	109.6				13	9	176	Charlotte and South Carolina ..	1,719,045			1,201,000	384,000			109.6		283,263	151,536		6		
— '58	40.3							Cheraw and Darlington ..	600,000			400,000	200,000										
1 Jan. '59	143.2	21.3						Greenville and Columbia ..	2,439,769	324,161		1,429,008	1,145,000	345,546	2,919,554	143.2		341,190	125,871				
31 Aug. '58	22.5							Kings Mountain ..	196,230	*		200,000			200,000	22.5					5		
31 July '58	32.0							Laurens ..	543,403	*		400,000	106,218		675,729	32.0		27,568	8,527				
28 Feb. '59	102.0							North-Eastern ..	2,011,652	*		985,743	960,410	108,172	2,057,325	102.0		220,014	96,145				
31 Dec. '58	136.0	106.0			62	59	790	South Carolina ..	5,517,384	1,103,130	374,060	4,179,475	2,770,463	193,086	7,701,337	242.0		1,501,008	820,511		7		
31 July '58	25.1		41.9					Spartanburg and Union ..							25.1								
TENNESSEE.																							
— '58			17.0	2			14	Edgefield and Kentucky ..	857,947	*		332,204	612,000	60,900		30.0	29,845	9,359	7,486				
— '58			1.8	12	10	171	171	East Tennessee and Georgia ..	3,637,367			1,289,673	2,020,000	200,000		140.0		318,718	187,466				
— '58			8.0	10	10	128	128	East Tennessee and Virginia ..	2,310,033	156,264		536,654	1,902,000	390,407		130.3	150,142	297,806	3	140,167			
— '58			5.1	36	38	576	576	Memphis and Charleston ..	5,444,304	743,729	109,066	2,237,665	2,700,000	443,616		287.6	562,041	1,330,812	778,036				
— '58			30.0	3.9	9	5	242	Memphis and Ohio ..	2,259,267	141,144		570,000	1,361,000	145,000									
— '58			56.8					Memphis, Clarksv. & Louisv. ..	2,000,000	100,500		298,721	740,000										
— '58			40.1	7	5	119	119	Mississippi and Tennessee ..	1,137,400			798,285	554,949	319,518		59.4	69,870	177,256	60,029				
— '58			2.3	4	5	46	46	Mississippi Central and Tenn. ..	892,710	82,908		317,447	632,500	22,369		47.4	54,175	83,129	44,666				
— '58			7.0	12	2	81	81	McMinnville and Manchester ..	533,807	56,816		144,894	406,000	5,000		34.2	30,065	23,808	13,892				
— '58			7.9	39	17	319	319	Nashville and Chattanooga ..	3,632,882			2,256,479	1,524,000	21,769		159.0	117,895	675,832	316,199		3		
— '58								Nashville and Northwestern ..															
— '58			4.2	11.7	5	32	32	Tennessee and Alabama ..	76,016	76,016		595,922	880,000	204,544		45.8	57,950	75,120	47,579				
— '58			0.6	8.0				Winchester and Alabama ..				216,962	413,000	408,477		30.0		1,248					
TEXAS, (all aided by State.)																							
— '58			158.0					Buffalo Bayou, Braz. & Col'do ..								32.0							
— '58			184.0					Galveston, Houston & Henderson ..								56.0							
— '58			31.0					Houston and Brazoria ..								43.0							
1 May '58	75.0		281.0	2	3	67	67	Houston and Texas Central ..	1,132,747	*		1,270,123	335,000	128,205	1,691,443	35.0		76,958					
— '59	25.0		110.0					San Antonio & Mexican Gulf ..								25.0							
— '59	28.0		756.0					Southern Pacific ..								28.0							
VERMONT.																							
31 May '59	90.7		8.6	19.6	7	8	181	Connect. & Passumpsic Rivers ..	2,345,724	185,421		1,200,000	800,000		90.7	98,856	192,122	82,001					
31 Aug. '59	119.6		13.0	—	26	18	555	Rutland and Burlington ..	3,989,708	601,509	92,859	2,233,376	3,145,001	1,013,764	6,392,141	119.6	305,762	364,288	81,561				
31 Aug. '59	62.0		3.4	—	10	5	201	Rutland and Washington ..	1,771,683			950,000			1,780,683	62.0	175,830	172,826	37,124				
30 Jun. '59	119.0		20.0	—	42	28	885	Vermont Central ..	8,402,055	*		5,000,000	3,353,000	1,423,299	10,276,299	166.0	617,262	702,271	115,678				
30 Jun. '59	47.0		2.8	—				Vermont and Canada ..	1,350,000			1,350,000			1,380,695	ope. r. by Vt. Central							
31 Aug. '59	23.7		0.7	—	4	4	54	Vermont Valley ..	1,212,274	89,612		516,164	798,200		1,308,864	23.7	47,324	43,998	10,493		55		
31 Aug. '59	54.0	10.5		—				Western Vermont ..	1,083,500			332,000	700,000		1,083,500	ope. r. b. Troy & Bos.		55,858					
VIRGINIA.																							
31 Aug. '59	41.3		—	122.1				Alex. Loudoun & Hampshire ..	1,492,194	42,000		1,403,018	36,188	88,131	1,534,194								
30 Sep. '58	75.8		—	63.5	9	8	216	Manassas Gap ..	3,262,990	209,901		3,038,500	418,000	292,956	3,939,729	75.8		125,599	65,554				
31 Mar. '59	79.2							Norfolk and Petersburg ..	2,106,066		10,500	1,511,000	489,110	209,923	2,222,168	79.2							
30 Sep. '59	103.5							Northwestern Virginia ..	5,322,150	*		468,605	5,719,229			103.5	345,427	248,004	—	—			
30 Sep. '59	148.7	9.1	4.5		12	10	101	Orange and Alexandria ..	6,060,824			1,981,167	2,316,879	285,532	6,225,015	97.6		288,297	157,571				
30 Sep. '59	123.3	10.1			19	13	279	Petersburg and Lynchburg ..	3,040,636	374,996		1,365,300	1,851,500	292,842	4,745,256	123.3		410,166	201,344				
31 Dec. '58	59.2	21.3			14	17	131	Petersburg and Roanoke ..	988,791	192,940		883,200	127,427	34,344	1,313,057	80.5		310,988	186,085		5		
30 Sep. '58	140.5	1.8			23	18	370	Richmond and Danville ..	3,588,653	*		1,981,017	1,126,407	25,153	4,424,671	142.3	263,893	491,674	267,192		65		
31 Mar. '58	75.1							Richm., Frederick & Potomac ..	1,985,579	*	52,800</												

AMERICAN RAILROAD BOND LIST.

* signifies that the road is in the hands of receivers. (†) that the company is in default in its interest. "S. F.," Sinking Fund. "var.," that the bonds fall due at different periods.

Description.	Amount.	Interest.	Due.	Price.	Description.	Amount.	Interest.	Due.	Price.	Description.	Amount.	Interest.	Due.	Price.
Alabama and Florida :					Chicago and Milwaukee :					Eaton and Hamilton :				
Mortgage	\$300,000	7	1867	---	1st Mortgage (convertible).....	\$512,000	---	---	---	1st Mortgage	\$757,734	†	var.	---
Convert. (guar. by Dir.).....	150,000	1863	---	---	Income	62,000	---	---	---	Erie and North-East :				---
Land Mortgage	23,500	1869	---	---	Real Estate 2d Mortgage	188,864	1868	---	---	Exchanged for Buff. and St. L.	149,000	---	---	---
Alabama and Miss. Rivers :					Chicago and Rock Island :					Evansville and Crawfordsville :				---
State (Ala.) Loan	123,171	---	---	---	1st Mortgage	1,397,000	7	1870	91	---				---
Mortgage	109,500	---	---	---	Chic., St. Paul and Fond du Lac :					Florida :—				---
Alabama and Tenn. Rivers :					1st Mortgage (on 1st Division).....	3,000,000	†7	---	---	Internal Improvement (State).....	1,655,000	7	1891	---
1st Mortgage convertible.....	526,000	7	1872	---	2d Mortgage (1st Land Grant).....	3,000,000	†8	---	---	Free Land, 2d Mortgage.....	1,500,000	8	1891	---
2d Mortgage	225,705	8	1864	---	Real Estate	350,000	†8	---	---	Florida and Alabama :				---
Albany, Vt. and Canada :					Cincinnati, Hamilton and Dayton :					Internal Improvement (State).....	---	7	1791	---
1st Mortgage	500,000	7	1867	---	1st Mortgage	461,000	---	1867	93	Free Land, 2d Mortgage.....	---	8	1791	---
Albany and West Stockbridge :					2d Mortgage	950,000	---	1880	84	Florida, Atlantic and Gulf Centr.:				---
Albany City (S. F.)	1,000,000	6	'66-'76	---	*Cincinnati, Wilm. and Zanesville :					Internal Improvement (State).....	300,000	7	1791	---
Androscoggin and Kennebec :					1st Mortgage	1,300,000	---	---	---	Free Land, 2d Mortgage.....	200,000	8	1791	---
1st Mortgage (Coupon) '60-'64.....	1,000,000	6	'62-'64	---	2d Mortgage	574,000	---	---	---	Free Land, 2d Mortgage.....	---	---	---	---
Stock, convert. (Coupon).....	710,000	6	'63-'66	---	3d Mortgage	158,000	---	---	---	Fox River Valley :				---
Atlantic and St. Lawrence :					Income	250,500	---	---	---	1st Mortgage	400,000	†	---	---
Dollar Bonds (Coupon).....	988,000	6	1866	---	Tunnel Right	1,000,000	---	---	---	2d Mortgage	180,000	---	---	---
Sterling Bonds (Coupon).....	484,000	6	1878	---	Cleveland and Mahoning :					Galena and Chicago Union :				---
City of Portland Loan (Coupe.)	1,500,000	6	'68-'70	---	1st Mortgage	694,500	---	---	---	1st Mortgage (S. F.).....	1,993,000	7	'82-'63	90
Baltimore and Ohio :					2d Mortgage	460,000	---	---	---	2d Mortgage (S. F.).....	1,738,000	7	1875	87
Maryland Sterling	3,000,000	6	---	---	3d Mortgage	38,800	---	---	---	Galveston, Houston, and Henderson :				---
Mortgage Coupon	2,500,000	6	1885	83	Clev., Painesville and Ashtabula :									---
"	700,000	6	1880	83	1st Mortgage	664,000	7	1861	98					---
"	1,128,500	6	1875	83	2d Mortgage	303,000	7	1862	---					---
"	1,000,000	6	1867	---	Special (Sunbury and Erie).....	500,000	7	1874	---					---
Balt. City Loan	5,000,000	6	---	---	Convertible Scrip	300,000	7	1880	---					---
Bellefontaine and Indiana :					Cleveland and Pittsburg :					*Great Western, Ill. :				---
1st Mortgage convertible.....	791,000	7	1866	57	1st Mortgage (Main Line).....	800,000	7	1860	60	1st Mortgage (W. Div. 100 m.).....	1,000,000	10	---	---
2d Mortgage	140,000	7	1870	---	2d Mort. (M. L.) or 1st Extension	1,188,000	7	1873	66	1st M. (E.D. 84 m.), 2d M. (W.D.).....	1,350,000	7	---	---
Real Estate (1861, '63, '68).....	129,000	var.	---	---	3d Mort. (M. L.) or 2d Extension	1,166,000	7	1875	---	Old Sang. and Morg. Railroad.....	41,000	---	---	---
Income (S. F.)	199,500	7	1859	---	4th Mort. (M. L.) or 3d Extension	1,154,000	---	---	---	2d Mortgage	323,000	---	---	---
Belvidere Delaware :					Income	118,000	---	---	---	Chattel (Equipment) Mortgage	374,426	---	---	---
1st Mort. (guar. C. and A.).....	1,000,000	6	1877	---	Dividend Bonds and Scrip.....	491,825	---	---	---	Greenville and Columbia :				---
2d Mortgage	445,500	6	---	---	Cleveland and Toledo :					1st Mortgage, Coupon	1,145,000	---	---	---
Camd. and Amb. R. R. Co.	244,000	6	---	---	1st Mortgage	377,000	7	1867	---	Hannibal and St. Joseph :				---
Black River and Utica :					2d Mortgage	305,000	7	1872	56	Missouri State Loan (1st Lien).....	3,000,000	6	20430	---
1st Mortgage	370,000	7	1869	---	3d Mortgage	324,000	7	1862	---	Land Security	5,000,000	7	---	---
Boston, Concord and Montreal :					Tol., Nor. and Clev. 1st Mort.	522,000	7	1863	75	2d Mortgage (convertible).....	757,000	7	---	---
1st Mortgage	200,000	6	1870	---	Tol., Nor. and Clev. 2d Mort.	299,600	7	1863	---	Plain	11,000	7	---	---
2d Mortgage	300,000	7	1870	---	Income	61,500	7	1862	---	Harrisburg and Lancaster :				---
3d Mortgage Coupons	150,000	6	---	---	C. and T. Income	192,950	7	1862	---	New Dollar Bonds	459,872	6	1883	90
4th Mortgage Coupons	200,000	7	---	---	C. and T. Income (convertible).....	409,900	7	1864	---	Hartford and New Haven :				---
Sinking Fund	200,000	6	---	---	C. and T. Income (convertible).....	373,000	7	1864	---	1st Mortgage	1,000,000	6	1873	97
Boston and Lowell :					C. and T. Dividend (convert.).....	199,735	7	1865	---	Hartf'd, Providence and Fishkill :				---
Mortgage	440,000	6	1873	---	C. and T. Income (convertible).....	129,000	7	1870	---					---
Boston and Worcester :					C. and T. S. F. Mortgage	640,000	7	1885	60					---
Mortgage (plain).....	100,000	6	1860	---	Income	5,000	7	1862	---					---
Mortgage (convertible).....	500,000	6	1860	---	*Cleveland, Zanesville and Cin. :									---
Buffalo and State Line :					1st Mortgage	---	---	---	---	Houston and Texas Central :				---
1st Mortgage	500,000	7	1866	90	*Columbus, Piqua and Indiana :					State (1st Lien) Loan.....	210,000	---	---	---
Income (4 in '59, 4 in '62).....	200,000	7	var.	---	1st Mortgage	---	---	---	---	Mortgage	125,000	7	1866	---
Unsecured	200,000	7	1864	---	Columbus and Xenia :					Hudson River :				---
Erie and North-East :					1st Mortgage	18,000	---	1859	---	1st Mortgage	4,000,000	7	'69-'70	102
1st Mort. on 1st Division.....	500,000	---	---	---	Dividend (due 1860, '61, '62, '66).....	272,700	var.	---	---	2d Mortgage	1,980,000	7	1860	80
Burlington and Missouri :					Connecticut River :					3d Mortgage	1,840,000	7	1875	82
1st Mort. on 1st Division.....	500,000	---	---	---	Mortgage (due 1862, '63, '78).....	253,000	6	var.	---	Convertible	1,002,000	7	1877	77
Burlington Loan	75,000	---	---	---	Connecticut and Passump. Rivers :					Illinois Central :				---
Cairo and Fulton (Mo.) :					1st Mortgage	800,000	---	---	---	Optional Right Scrip.....	65,000	7	1868	---
State (Mo.) Loan.....	650,000	6	'78-'79	---	2d Mortgage	116,500	---	---	---	Construction	12,885,000	7	1875	89
Camden and Amboy :					3d Mortgage	97,000	---	---	---	Construction	4,116,000	6	1875	89
Mortgage	367,000	6	1864	---	Dauphin and Susquehanna :					Free Land	3,000,000	7	1860	104
Mort. (chgd from Sterlg).....	888,000	5	1864	---	1st Mortgage	---	---	---	---	Indiana Central :				---
Mortgage	800,000	6	1849	---	2d Mortgage	---	---	---	---	1st Mortgage (convertible).....	600,000	7	1866	---
Mortgage	1,700,000	6	1875	87	Income	---	---	---	---	2d Mortgage	284,500	10	---	---
Sterling (\$220,000).....	1,008,000	6	1864	---	Dayton and Michigan :					Income	281,500	10	---	---
Sterling (\$225,000).....	1,080,000	6	1864	---	1st Mortgage	---	---	---	---	Indianapolis and Cincinnati :				---
New Loan (iss'd \$337,000).....	2,500,000	6	1887	---	2d Mortgage	---	---	---	---	1st Mortgage	500,000	7	1866	---
Unsecured	800,000	6	1863	---	Income	---	---	---	---	2d Mortgage	400,000	7	---	75
*Catawissa, Williamsport, and Erie :					Dayton and Western :					Real Estate Mortgage	200,000	7	1858	---
1st Mortgage	1,500,000	7	1866	32	1st Mortgage	300,000	---	---	---	Dividend	66,284	7	var.	---
2d Mortgage	309,036	7	1866	---	2d Mortgage	---	---	---	---	Income and Domestic	176,000	---	---	---
Chattel Mortgage	380,000	10	1871	---	Delaware :					Indiana, Pittsb. and Cleveland :				---
Cayuga and Susquehanna :					1st Mortgage	500,000	---	---	---	1st Mortgage	656,000	---	---	---
1st Mortgage	300,000	7	1865	---	Guaranteed	65,000	---	---	---	2d Mortgage	167,000	---	---	---
Unsecured	89,000	7	1862	---	State Loan	170,000	---	---	---	Income	166,000	---	---	---
Central of Georgia :					Delaware, Lackawanna and Wm :					Domestic	34,200	---	---	---
Mortgage	106,267	7	1863	---	1st Mortgage	900,000	---	1871	---	Jeffersonville :				---
Central of New Jersey :					1st Mortgage (E. Extension).....	1,500,000	---	1875	98	1st Mortgage	289,000	---	---	---
1st Mortgage	1,500,000	7	var.	---	2d Mortgage	2,600,000	---	1881	92	2d Mortgage	362,000	---	---	---
2d Mortgage	1,500,000	7	1875	---	Income (due 1862, '65 and '67).....	1,263,170	var.	---	---	*Kennebec and Portland :				---
Income	375,000	7	var.	---	Detroit and Milwaukee :					1st Mortgage (City and Town).....	800,000	6	1870	---
*Central Ohio :					1st Mortgage (convertible).....	2,500,000	7	1875	---	2d Mortgage	230,000	6	1861	---
1st Mortgage	450,000	7	1861	35	2d Mortgage	1,000,000	8	1866	---	3d Mortgage	250,000	6	1862	---
2d Mortgage	800,000	7	1864	---	3d Mortgage (convertible).....	750,000	10	1863	---	*Kentucky Centr. (Cov. and Lex.) :				---
3d Mortgage	800,000	7	1865	---	4th Mortgage (G. W. R. R.).....	500,000	8	---	---	1st Mortgage	160,000	6	---	---
4th Mortgage (S. F.).....	960,000	7	1885	---	Dubuque and Pacific :					2d Mortgage	280,000	7	---	---
Income (1858, '59 and '60).....	1,172,200	7	var.	---	New Construction	800,000	†	---	---	2d Mortgage (convertible).....	1,000,000	7	---	---
Income (iss. to Muskingum Co.)	100,000	7	1862	---	Dubuque Western :					3d Mortgage	600,000	7	---	---
Charleston and Savannah :					1st Mortgage	344,000	†	---	---	Guaranteed by Covington.....	200,000	6	---	---
1st Mortgage	510,000	6	---	---	Eastern (Mass.) :					Cincinnati (exchanged).....	100,000	6	---	---
2d Mortgage	1,000,000	7	---	---	Income (due \$75,000 annually).....	525,000	6	var.	---	Income (issued 1854).....	400,000	10	1859	---
Cheshire :					2d Mortgage (convertible).....	710,000	5	1862	---	Income (issued 1855).....	210,000	6	1860	---
Mort. (1860, '63, '75 and '77).....	788,400	7	var.	---	3d Mortgage (convertible).....	445,000	6	1874	---	Kent'ky Centr. (Lex. and Danv.) :				---
Chicago, Burlington & Quincy :					1st M. (State) \$75,000 a year after '65	500,000	5	var.	---					---
Consolidated 1st Mort.	1,660,000	8	1883	---	East Tennessee and Georgia :					Keokuk, Ft. D. Moines and Minn. :				---
Ohio and Aur. 1st Mort.	405,000	7	1867	---	1st Mortgage	970,000	---	---	---	City of Keokuk, (special tax).....	400,000	8	---	---
Ohio and Aur. 2d M. (S. F.).....	308,000	7	1869	---	Endorsed by State of Tennessee	150,000	---	---	---	Lee County, 20 years.....	150,000	8	---	---
Cent. Mil. Tr. 1st Mort.	400,000	7	1864	---	Mortgage (ordinary).....	700,688	---	---	---	Keokuk, Mt. Pleasant and Muscat.				---
Cent. M. T. 2d M. (Conv.).....	281,000	8	1868	---	East Tennessee and Virginia :					Lee County	150,000	8	---	---
Chicago, Alton and St. Louis :					State, 1st Lien.....	1,002,000	---	---	---	City of Keokuk	200,000	8	---	---
1st Mortgage	---	---	---	---	Endorsed by State of Tennessee	200,000	---	---	---	Henry and Louisa Company's	60,000	8	---	---
2d Mortgage	---	---	---	---	1st Mortgage (after State).....	100,000	---	---	---	Lehigh Valley :				---
3d Mortgage	---	---	---	---	Redeemable in Stock.....	66,950	---							

[illegible]

Price.

Description.	Amount.	Interest.	Due.	Price.	Description.	Amount.	Interest.	Due.	Price.	Description.	Amount.	Interest.	Due.	Price.
La Crosse and Milwaukee:					Montgomery and West Point:					Orange and Alexandria:				
1st Mortgage (Eastern Div.)	\$903,000	†			Alabama State Loan	\$122,622	—	var.		State Loan	\$400,000	—		
2d Mortgage (Eastern Div.)	1,000,000	†			Mortgage (due 1860, '63 and '65)	350,000	6	var.		1st Mortgage	1,055,500	6		79
1st Land Grant (Western Div.)	4,000,000	†			Mortgage	450,000	6	1869		2d Mortgage	461,378	6		
2d Land Grant (Western Div.)	555,600	†			Muscougee:					Pacific (Mo.):				
3d Mortgage (whole road)	1,700,000	†			1st Mortgage	249,000	7			State (Mo.) Loan	7,000,000	6		
Farm Mortgage	1,087,700	†			Nashville and Chattanooga:					State Loan (S. W. Branch)	2,800,000	6		
Unsecured Bonds	1,785,000	†			Mortgage (State endorsed)	1,500,000	—			Construction	4,500,000	6		
Lexington and Frankfort:					Chat. and Clev. Subsc. (endors.)	150,000	—			Panama:				
Mortgage, due 1864, '69 and '74	180,000	6			Not endorsed	24,000	—			1st Mortgage Sterling	1,250,000	7	1865	100
Little Miami:					*New Albany and Salem:					2d Mortgage Sterling	1,150,000	7	1872	
Cincinnati Loan	100,000	—			Crawfordsville	175,000	7			Convertible	27,000	7		
1st Mortgage	138,000	6		85	1st Mortgage	500,000	10			Pennsylvania:				
2d Mortgage	7,000	6			1st Mortgage	2,235,000	6			1st Mortgage (convertible)	4,905,000	6	1863	100
3d Mortgage	981,000	6			New Haven and Hartford:					2d Mortgage	1,928,000	6	1875	
Long Island:					N. Hav., N. Lond. and Ston'gton:					2d Mortgage Sterling	1,539,840	6	1875	
State Loan (S. F.)	100,000	5	1876		Mortgage	450,000	7			State Works Bonds	7,400,000	5		
1st Mortgage	500,000	6	1870		Mortgage	200,000	6			Pennsylvania Coal Company:				
Louisville and Frankfort:					Extension	100,000	10			1st Mortgage	600,000	7		
Louisville Loan	174,000	—			New Haven and Northampton:					Penobscot and Kennebec:				
1st Mortgage	248,000	—			1st Mortgage	500,000	—	1869		Bangor City 1st Morig. (Coupon)	800,000	6	1874	
Louisville and Nashville:					New Jersey:					2d Mortgage (Coupon)	250,200	6	1870	
State (Tenn.), 1st Lien	300,000	6			Company's (various)	711,000	—	var.		3d Mortgage (Coupon)	156,500	6	1871	
1st Mortgage	2,000,000	—			New London, William and Palmer:					Pensacola and Georgia:				
McMinnville and Manchester:					1st Mortgage	500,000	71			State Internal Improvement			7	35 y's
State (Tenn.)	372,000	6			2d Mortgage	300,000	61			Free Land				
Mortgage	24,000	7			Income (convertible)	152,000	61			Peoria and Oquawka:				
Mortgage	10,000	6			New London City									
Madison and Indianapolis:					100,000	61				Peru and Indianapolis:				
State (Ind.) Loan					N. Orleans, Jackson and Gt. North:									
Mortgage					State (Miss.) Loan	155,000	—			Petersburg:				
*Marietta and Cincinnati:					1st Mortgage	3,000,000	8	1886		Mortgage (due 1863 to 1872)	103,000	7	var.	
1st Mortgage (convertible)	2,500,000	71	1868		N. Orleans, Opelous, and Gt. West:					Petersburg and Lynchburg (S. Side):				
2d Mortgage	2,000,000	71			Louisiana State Loan	621,000	—			State (Va.) Loan (S. F.)	800,000	7	var.	
3d Mortgage	1,500,000	71			New Orleans City Loan					1st Mortgage (1859-'70-'75)	365,000	6	var.	
Sterling Income	333,000	4			1st Mortgage (S. F.)	1,500,000	—			3d Mortgage (1862-'70-'72)	378,000	6	var.	
Domestic	928,617	—	59-'62		New York Central:					Special Mortgage (1865-'68)	175,000	6	var.	
Memphis and Charleston:					Albany Loan—Alb. and Sch'dy.	127,000	5	1864	101	Last Mortgage (1861 to 1869)	133,500	8	var.	
State (Tenn.) Loan	1,100,000	6			State Loan—Sch'dy and Troy	100,000	6	1867		Phila., Germant'n and Norrist'n:				
1st Mortgage	1,600,000	7	1880		State Loan—Rochester and Syr.	77,382	55	1861		Consolidated Loan	274,800	—		
Memphis, Clarkesv. and Louisv.:					State Loan—Buffalo and Roch.	55,300	55	1865		Loan of 1842	100,000	—		
State (Tenn.) Loan	910,000	6			State Loan—Roch., L. and N. F.	298,000	7	1861		Philadelphia and Reading:				
Memphis and Ohio:					Stock Subscription	785,000	6	1883	86	Mortgage	705,000	5	1890	96
State (Tenn.) Loan	1,340,000	6			Premium Consolidated Stock	8,000,000	6	1883	86	Mortgage	1,572,800	6	1860	93
Michigan Central:					Real Estate	221,000	6	1883	86	Mortgage (convertible)	885,000	6	1860	93
1st Mortgage Sterling	467,489	6			New Convertible	3,000,000	7	1864	100	Mortgage (convertible)	134,000	6	1860	
1st Mortgage (convertible)	500,000	8		96	*New York and Erie:					Mortgage	3,209,600	6	1870	81
Unconvertible	253,000	8			1st Mortgage	3,000,000	7	1867	98	Mortgage (convertible)	3,586,500	6	1886	70
1st Mortgage (convert.) Dollar	3,831,000	8			2d Mortgage	4,000,000	7	1869	91	Lebanon Valley R. R. (convert.)	1,500,000	7	1886	07
1st Mortgage (S. F.), convertible	3,087,000	8			3d Mortgage (convertible)	6,000,000	7	1871	77	Real Estate Mortgage	516,450	—	var.	
Mch. Southern and N'n Indiana:					4th Mortgage (convertible)	3,729,000	7	1880	49	Phila., Wilmington and Baltimore:				
Michigan Southern	993,000	17	1857	70	5th Mortgage	1,277,000	7	1883	75	Mortgage Loan	688,929	6	1860	
Northern Indiana	985,000	17	1861		Unsecured (convertible)	2,618,000	7	1871	28	Mortgage Loan	1,696,500	6	1884	
Erie and Kalamazoo	300,000	†	1862		Unsecured (convertible)	2,443,000	7	1862	28	Improvement	119,000	6	1863	
Michigan Southern	259,000	†	1863		Sinking Fund	2,193,000	7	1875	28	Pittsburg and Connellsville:				
Northern Indiana	299,000	†	1863		New York and Harlem:					Pittsburg Loan	500,000	—		
Jackson Branch	203,000	†	1865		1st Mortgage	3,000,000	7	1873	96	Alleghany Co. Loan	750,000	—		
Goshen Air Line	1,385,000	†	1868		2d Mortgage	1,000,000	7	1864	93	Connellsville Loan	100,000	—		
Detroit and Toledo	336,000	†	1876		3d Mortgage	1,000,000	7	1867	73	McKeessport Loan	100,000	—		
General Mortgage (S. F.)	2,458,000	†	1885		New York and New Haven:					Baltimore Loan	1,000,000	—		
2d Mortgage	2,175,000	†	1877		1st Mortgage	311,000	7	1860		Cumberland Loan	200,000	—		
*Milwaukee and Beloit:					1st Mortgage	964,000	6	1866	96	*Pittsburg, Ft. Wayne and Chicago:				
1st Mortgage	630,000	8			1st Mortgage	930,000	6	1875		1st Mortgage (O. and P.)	1,000,000	—	1865	
Milwaukee and Chicago:					N. York, Providence and Boston:					2d Mortgage (O. and P.)	750,000	—	1866	
1st Mortgage	400,000	8			1st Mortgage	331,000	6			Income (O. and P.)	1,991,000	—	1873	
2d Mortgage	200,000	7			North Carolina:					Bridge (O. and P.)	199,500	—		
*Milwaukee and Horicon:					State Loan	2,000,000	6			1st Mortgage (O. and I.)	1,000,000	—	1872	
1st Mortgage	420,000	8			State Loan	1,000,000	6			2d Mortgage (O. and I.)	380,000	—	1873	
2d Mortgage	600,000	8			North-Eastern (S. C.):					1st Mortgage (F. W. and Chic.)	1,250,000	—	1873	
Farm Mortgage	150,000	10			1st Mortgage	700,000	—			Real Estate (F. W. and Chic.)	498,000	—	1874	
Milwaukee and Mississippi:					2d Mortgage	224,500	—			Mortgage, Consolidated Comp'y	1,229,000	—	1887	
1st Mortgage (convertible)	74,000	10	1861		Real Estate	35,910	—			Pittsburg and Steubenville:				
1st Mortgage (convertible)	526,000	8	1862		Northern Central:					Mortgage	800,000	†	1865	
1st Mortgage (convertible)	650,000	8	1863		Balt. and Susq. R. R. (Coupons)	150,000	6	1866		Platte County:				
1st Mortgage (convertible)	1,250,000	8	1877		Md. State Loan (B. and Susq.)	150,000	6			State (Mo.) Loan	300,000	6	1879	
South-West Branch	350,000	8	1866		York and Cumberland 1st Mort.	175,000	6	1870		Potsdam and Watertown:				
2d Mortgage	600,000	10	1862	35	York and Cumberland 2d Mort.	25,000	6	1871		1st Mortgage	800,000	7	64-'74	
Construction	500,000	7	1859		York and C. guar. by Baltimore	600,000	6	1877		Quincy and Chicago:				
3d Mortgage	500,000	8	1862		N. C. Contract	292,300	6	1875		1st Mortgage	1,200,000	—	1873	
Mississippi Central:					Construction	1,903,500	6	1886		Racine and Mississippi:				
1st Mortgage	1,007,363	7			Northern (Ogdensburg):					1st Mortgage (Eastern Division)	680,000	†		
Income	91,200	10			1st Mortgage	1,500,000	7	1859		1st Mortgage (West'n Division)	757,000	†		
Tennessee State					2d Mortgage	3,077,000	7	1861		Raleigh and Gaston:				
Mississippi Central and Tenn.					North Missouri:					Coupon	100,000	—	1862	
State (Tenn.) Loan	529,000	6			State Loan	2,000,000	6			Rensselaer and Saratoga:				
Income	95,500	—			State Loan	2,000,000	6			1st Mortgage			7	1863
Mississippi and Missouri:					State Loan	350,000	6			Richmond and Danville:				
1st Mortgage (convertible)	1,000,000	7			North Pennsylvania:					State (Va.) Loan	600,000	—		
2d Mortgage (S. F.)	400,000	8			Mortgage	2,500,000	—			Guaranteed by State	200,000	—	1875	96
Oakalosa Division	1,425,000	7			Chattel Mortgage	214,500	10		68	Mortgage (Coupon)	250,000	—	1860	
Land Grant	7,000,000	7			Northern (N. H.):					Registered	150,000	—	1860	
Mississippi and Tennessee:					Mortgage (due 1860, '64 and '74)	219,500	—	var.		Richmond, Fred. and Potomac:				
Tennessee State Loan	98,000	6	1885		Norwich and Worcester:					Sterling (£67,000)	324,006	—	1860	
Mississippi State Loan	202,796	6			Mass. State Loan	400,000	6	1877		Convertible	54,500	—	1875	
1st Mortgage	171,000	7	1876		Mortgage	205,500	6	1890		Dividend Certificates	35,800	—	1857	
Mobile and Ohio:					Mortgage	16,000	7	1890		Dividend Certificates	265,800	—	1860	
City (Mobile) Tax Loan	400,000	6			Dividend Scrip and Bonds	102,330	6	var.		Richmond and Petersburg:				
Tennessee State Loan	674,860	6			Ohio and Mississippi (O. and Ind.):					Coupon	150,000	—	1876	
Alabama State Loan	389,410	6			1st Mortgage	2,103,500	†	1858		*Rutland and Burlington:				
Income	759,415	8	1861		2d Mortgage	316,995	†			1st Mortgage	1,800,000	—		
Income	354,723	8	1862		Construction	4,637,920	†	1858		2d Mortgage	913,500	—		
Income	375,132	8	1865		Income	3,591,185	†	1858		3d Mortgage	423,400	—		
Income	18,700	8	1867		Ohio and Mississippi (Ill.):					Sacramento Valley:				
Sterling	878,035	6	1883		1st Mortgage					1st Mortgage	400,000	—		
Mississippi State Loan					2d Mortgage					2d Mortgage	356,000	—		
	200,970	6												

AMERICAN RAILROAD BOND LIST.

For explanations see preceding pages.

Description.	Amount.	Interest.	Due.	Price.
Sandusky, Dayton and Cincinnati:				
Mortgage	182,000	10	1856	---
Mortgage	997,000	7	1866	---
Mortgage	1,000,000	7	1875	---
Dividend	224,000	6	'60-'62	---
Sandusky, Mansfield and Newark:				
1st Mortgage	1,290,000	1	---	---
Saratoga and Whitehall:				
1st Mortgage	250,000	7 1/2	1858	---
1st Mortgage (R. and W. Br.)	100,000	7 1/2	1856	---
Unsecured	45,000	7 1/2	1858	---
Seaboard and Roanoke:				
1st Mortgage	300,000	---	1860	---
3d Mortgage	75,000	---	1870	---
4th Mortgage	60,000	---	1856	---
South Carolina:				
State Loan	200,000	5	1868	---
Sterling	183,333	6	1863	---
Sterling	2,000,000	5	1866	---
Auditor's	246,500	7	---	---
Southern Mississippi:				
1st Mortgage	500,000	---	---	---
South-Western (Ga.):				
1st Mortgage	631,000	---	1875	---
*Springfield, Mt. Vern. and Pittsb.:				
1st Mortgage	500,000	---	---	---
2d Mortgage	450,000	---	---	---
*Steuernv. and Ind. (P. C. and C.):				
1st Mortgage	1,500,000	---	---	---
2d Mortgage	900,000	---	---	---
*St. Louis, Alton and Chicago:				
1st Mortgage	2,000,000	7 1/2	---	---
2d Mortgage	1,535,000	7 1/2	---	---
3d Mortgage (Income)	1,000,000	10 1/2	---	---
St. Louis and Iron Mountain:				
State (Mo.) Aid	2,501,000	---	---	---
St. Louis City Subscription	500,000	---	---	---
St. Louis County Subscription	1,000,000	---	---	---
Carondelet Subscription	60,000	---	---	---
Sunbury and Erie				
Mortgage	1,000,000	7	---	---
Mortgage	7,000,000	5	---	---
Syracuse, Binghamton and N. Y.:				
Terre Haute, Alton and St. Louis:				
1st Mortgage (convertible)	1,000,000	7 1/2	'62-'72	50
2d Mortgage (convertible)	2,000,000	7 1/2	'68-'70	32
1st Mortgage (Bel. and Ill.)	517,000	7 1/2	1873	---
2d Mortgage (Bel. and Ill.)	494,000	7 1/2	1869	---
3d Mortgage (Bel. and Ill.)	503,000	10 1/2	1874	---
Tennessee and Alabama:				
State (Tenn.) Loan	814,000	---	---	---
Mortgage	46,000	---	---	---
Terre Haute and Richmond:				
1st Mortgage (convertible)	230,000	7	1866	---
Toledo, Wabash and Western:				
1st M. (L. Er. Wab. and St. Louis)	2,500,000	7 1/2	1865	---
2d M. (L. Er. Wab. and St. Louis)	1,000,000	7 1/2	1869	---
3d M. (L. Er. Wab. and St. Louis)	1,200,000	7 1/2	1891	---
Real Estate (L. Er. W. and St. L.)	300,000	7 1/2	1861	---
1st Mortgage (Toledo and Ill.)	900,000	7 1/2	1865	---
2d Mortgage (Toledo and Ill.)	800,000	7 1/2	1865	---
3d Mortgage (Toledo and Ill.)	600,000	7 1/2	1865	---
*Vermont Central:				
1st Mortgage	---	---	---	17
2d Mortgage	---	---	---	---
Virginia Central:				
Mort. guaranteed by State of Va.	100,000	6	1880	82 1/2
Mortgage	206,000	6	1872	---
Mortgage (coupons)	941,000	6	1884	---
Dividend, due 1865, '66 and '75	238,346	6	var.	---
Income (1859 to 1863)	168,382	7	var.	---
Virginia and Tennessee:				
State (Va.) Loan	1,000,000	6	1887	---
1st Mortgage	500,000	6	1872	82 1/2
Fractional Mortgage	23,500	6	1868	82 1/2
2d or Enlarged	1,000,000	6	1884	80
Salt Works Br. Mort. due '58-'61	203,000	6	var.	---
3d Mortgage (Income)	431,000	6	1865	79 1/2
Warren (N. J.):				
1st Mortgage	568,500	---	1875	---
Watertown and Rome:				
Mortgage (new bonds)	800,000	7	1880	---
Western (Mass.):				
Sterling (\$899,900)	4,319,520	5	'68-'71	---
Albany City (Alb'y and W. S.)	1,000,000	6	'66-'76	---
*Western Vermont:				
1st Mortgage	700,000	---	1861	---
Williamsport and Elmira:				
1st Mortgage	1,000,000	7	1890	---
Wilmington and Manchester:				
1st Mortgage	596,000	---	---	---
2d Mortgage	1,000,000	---	---	---
Income	177,000	---	---	---
Wilmington and Weldon:				
Mortgage, payable in England	443,555	---	---	---
Sterling, issued in 1858	144,500	---	---	---
Company's, endorsed by State	203,500	---	---	---
Winchester and Potomac:				
Mortgage	120,000	6	1867	---
York and Cumberland:				
1st Mortgage	398,000	1	---	---

Railroad Reports.

RAILROAD COMPANIES will oblige us by sending us copies of their Reports as soon as they are published.

American Railroad Journal.

Saturday, March 24, 1860.

New Jersey Railroads and Canals.

In another column we have given a tabulated statement of the financial condition of the railroad and canal companies of the State of New Jersey—the same being an abstract from the official returns made for the year 1859 to the Legislature. Aggregating these, the following are the results:

Share capital paid in \$17,951,774
 Funded debt 15,691,375
 Other liabilities 1,856,061

Total liabilities of 18 companies.. \$35,499,210
 Cost of the 18 works represented 32,797,916

Liabilities over cost of works \$2,701,294
 —of which amount about \$1,000,000 is invested in the stock of the Philadelphia and Trenton Railroad, and the remainder charged to other property held by the companies or to profit and loss. The total length of railroad in the State is 556 miles, which has cost \$26,130,481, or \$47,000 per mile; and the total length of canal is 148 miles, which has cost \$6,666,435, or \$45,000 per mile. The gross earnings on both railroads and canals for 1859 amounted to \$5,785,918, and the working expenses to \$2,686,174, leaving as net earnings applicable to interest and dividend, \$3,099,744, or about 9 1/2 per cent. on the cost of the works, or about 8 per cent. on the total liabilities of the companies. Of the whole number of the companies, however, only nine companies paid dividends —(See Table)—the remaining nine companies having earned a bare sufficiency to pay current expenses and interest.

Wills Valley Railroad.

This road is 82 miles long, extending from Chattanooga, Tenn., to Gadsden, Ala. According to the report of the president, made up to the 1st October last, 18 miles were in readiness for the cross-ties, and 16 more were half completed. Since then several additional miles have been completed, and are also ready for the cross-ties. In the finished portion is included nearly all the heavy work. The remainder is of so light a character that it can be finished in advance of track laying so as never to delay its progress.

The total estimated value of work done to October 1, 1859, was \$108,176 52—of which \$32,233 14 was paid in stock, and \$75,943 38 in cash.

The number of contractors was 25; sub-contractors, 33; workmen, 233.

Much of the work on the whole line of the road has been let for half cash and half stock. Estimating the proportion for the remainder of the work to be the same as upon the completed portion, we have the following result:

Value of work done, as above \$108,176 52
 Cash required to complete the 62 miles under contract 72,000 00
 Do. to grade remaining 20 miles 15,000 00
 Stock subscription—proportion 36,600 00

Total cost of grading \$231,776 52
 —or \$2,828 per mile, including all expenses. Provisions for the completion of this road are ample.

The available cash subscription is \$172,000—of which there has been expended \$75,943 38; required for completion, \$87,000; leaving an excess of cash assets of \$9,056 62. To which may be added the loan of \$75,000 for five years, authorized to be made to it by the Alabama Legislature—being its proportion of the Three Per Cent. Fund, alluded to elsewhere in this paper. To this should also be added the valuable donation by the General Government of 200,000 acres of land, in alternate sections on the line of the road, much of which is of the highest value as mineral and farming lands. But few roads are built that have advantages to compare with this. Forming a part of the air line road between New Orleans and New York, it can never have a competitor, while for cost of construction, it will compare with the most favored road in any part of the world.

The very small amount required to keep the road in repair, its important connections, etc., etc., offer for it so many advantages that a leading foreign capitalist has agreed to take its first mortgage bonds, in payment for iron, and the contract has been ordered to be closed by the president of the company. It is expected that the whole line, including the North East and South West Alabama Railroad, with which it connects, and with which it is eventually to be amalgamated, together with the Selma connections, will be completed in two years.

Stanstead, Sheffield and Chambly Railroad of Canada.

At a general meeting of the stockholders of this road, held at Waterloo on the 5th inst., the following named gentlemen were elected Directors for the ensuing year:

Hon. L. T. Drummond, M. P. P., A. B. Foster, Esq., M. P. P., Benj. Savage, Esq., Chas. Allen, Esq., J. G. Cowee, Esq., John Williams, Esq., Ralph Merry, Esq., A. A. Knowlton, Esq., D. Russ Wood, Esq.

The following gentlemen were elected officers for the ensuing year, being the same as last:

Hon. L. T. DRUMMOND, *President*.
 A. B. FOSTER, Esq., *Vice-President and Managing Director*.

L. S. HUNTINGTON, Esq., *Secretary and Treasurer*.

The stockholders passed the following resolution:

Resolved, That the Stockholders are deeply sensible of the advantage the Company has gained by having the Vice-President, A. B. FOSTER, Esq., as Managing Director; and they are well satisfied that without the talent, energy and perseverance displayed by him, and given to the Company, with his whole time, the road would by no means be in that favorable position and state of forwardness in which it now is; and they venture to express their earnest desire that the Company may continue to have the benefit of his invaluable services.

We have watched the progress of this road with considerable interest, as it is destined, when completed, to play an important part among the lines connecting the St. Lawrence with the seaboard. The resolution of the Stockholders is a compliment well deserved by the recipient, to whom may be given the credit of perseveringly and untiringly adhering to the undertaking through the most discouraging ordeals, and of bringing it to its successful state of progress. About 30 miles of the road are in operation, and 12 miles more will be

added in the course of the coming summer. The accounts of the working for the past year were very satisfactory.

Alabama and Tennessee Rivers Railroad.

This road is now completed and in operation from Selma to Talladega, a distance of 110 miles. Efforts are being made to extend it to Jacksonville, and thence to its final terminus at Gadsden, where a connection will be made with the Tennessee and Coosa Railroad, running thence to Gunter's Landing, and through that road with the Winchester and Alabama, which has its northern terminus at Dechard, a point on the Nashville and Chattanooga Railroad. At Jacksonville, to which point it should be constructed with all possible speed, it will join the road now under construction to Dalton, the southern terminus of the East Tennessee and Georgia road—one of the links in the great air line extending to the most remote corner of Maine. For the purpose of hastening the completion of this southern link, a meeting of the citizens of Selma was held on the 1st inst., at which Hon. THOMAS A. WALKER, President of the company, related, in a concise manner, its present financial condition. He stated that the road could be completed from Talladega to Gadsden in less than two years, at a cost of \$600,000; that the available means of the company are, the \$225,000 appropriation of the Three per cent. fund, and \$225,000 of the first mortgage bonds undisposed of; that along the line from Talladega, \$100,000 could probably be raised; and with a like amount from the city of Selma, the road could be completed through to its terminus at an early day. The following resolution was adopted:

Resolved, That we recommend to the Council of the city, to pledge Selma for half the amount required (one hundred thousand dollars,) on condition that an equal amount shall be raised by the people of the up country interested in the completion of the road.

Dalton and Jacksonville Railroad.

This road commences at Dalton, Ga., the southern terminus of the East Tennessee and Georgia Railroad, and runs thence in a southwesterly direction to Jacksonville, in Benton Co., Ala., a distance of about 91 miles. At this point it intersects the line of the Alabama and Tennessee Rivers Railroad, running thence to Selma. This road is already completed and in operation from Selma to Talladega, 110 miles, and will probably be finished to Jacksonville in twelve or fifteen months. At the southern terminus of this road, commences the line of the Selma and Gulf Railroad, running thence to a connection with the Alabama and Florida Railroad at or near Sparta, through which, and the Mobile and Great Northern Railroad, a direct connection will be formed between Mobile and Dalton in a distance of about 380 miles. The East Tennessee and Georgia Railroad Company are deeply interested in the construction of the Dalton and Jacksonville road; indeed it is of the first importance to them, as it will give to their road immediate connection with the heart of Alabama, and her proposed netting of railroads, now set in rapid progress of construction, by the recent passage of the three per cent. appropriation bill.

The whole line of the Dalton and Jacksonville road has been surveyed and located by the Chief Engineer of the company, GEORGE WADSWORTH, Esq. The amount of work required to build this

road is very light, considering the direction in which it crosses the country. He hopes to lay 10 or 12 miles of track this season—the iron for which, and a locomotive, has been contracted for. Ground has been broken within a few weeks upon the Selma and Gulf road, and proposals are invited for the grading of a portion of the line of the Mobile and Great Northern Railroad, extending from the east bank of the Tensas river to Mobile. By the time the Dalton and Jacksonville road is completed, the rail will be laid to Pensacola and also Mobile. This route will shorten the distance from Dalton to Mobile some 120 miles, and when completed will be a part of the route from New York to the Gulf of Mexico.

The office of the Dalton and Jacksonville Railroad Company is at Dalton, Ga. The officers are:

President, Hon. L. W. CROOK.

Secretary, EDWARD WHITE.

Treasurer, JAMES MORRIS.

Chief Engineer, GEORGE WADSWORTH.

Selma and Gulf Railroad.

We learn from the Selma Reporter that work has been commenced upon this road between Selma and the Alabama river. Several other contractors are ready to begin work very soon. The connections which this road will make with the Alabama and Tennessee Rivers road, the Jacksonville and Dalton road, and the Tennessee and Virginia roads, will make it a line of great importance. A letter from a Selma correspondent of the Reporter says:

We have just received news of the final passage of the three per cent. appropriation bill. This gives for the Alabama and Tennessee Rivers road, \$225,000; to the Wills Valley road, \$75,000; to the Selma and Gulf, \$40,000, and, finally, all of the amount of \$633,000, besides the annual interest of near \$40,000, to the Central.

The Alabama and Tennessee road should be operating to Jacksonville—35 miles from its present terminus—in twelve or fifteen months; and, in twelve or fifteen months after that, we shall probably have all three connections northwardly, to wit: from Jacksonville to Dalton, 91 miles; from Gadsden to Chattanooga; and from Gadsden to Gunter'sville and Winchester, and shortly after that the Central may be opened from Montevallo to Decatur, making the distance from Selma to Nashville only 290 miles.

This direct route would be of vast benefit to Mobile, and to Selma, also. It would make ours the great route of travel from the Gulf to all the great points of the North, East and Europe, and also of the central West.

We intend to make the Selma and Gulf a very superior road, for fast time and heavy loads. No grade exceeding 40 feet, no curve exceeding 2½ or 3 deg., and very little of this. The grade, too, is so distributed as to present no very long stretch of 40 feet continuously. In the line across Dallas and Wilcox counties, from Selma to Monroe county line, we lose only about 1¼ miles, air line from north bank of the river to line of Monroe, 39½ miles, and railroad, 40¾. There are some six to eight miles tolerably heavy work; but the average estimate for the grading, at good prices, will be but little over \$5,000 per mile.

We want to complete the road through in two years, if possible. If Mobile will aid us a little, we can do this. She is deeply interested, as there will be on the line of our road near 40,000 bales, and out of the 150,000 bales and upwards that will be received at Selma in two or three years, 75,000 or 100,000 bales will pass over this road, and other articles I will not now attempt to enumerate. What the coal tonnage will amount to, no one can guess; somewhere between 100,000 and 500,000 tons, probably.

I must say, however, that I think the Dalton and Jacksonville road is now in good hands, and

that good progress will be made towards Jacksonville, and perhaps make the connection in the course of two years. I know the present President, Judge Crook, of that road. He is a man of decided energy, intelligence, prudence and character, and he is anxious to make this connection, to get to the Gulf markets.

Alabama Three Per Cent. Fund.

In several articles in this week's paper we have referred to the appropriation recently made by the Legislature of Alabama for railroad purposes. We find in the Montgomery Confederation a condensed statement of the provisions of this bill. It is as follows:

The unappropriated balance of the Three per cent. fund, and the interest thereon as ascertained and appropriated by the last Legislature, amounted to \$663,000, which has been disposed of by the recent law, as follows:

Northeast and Southwest R. R. Co.	\$218,000
Wills Valley R. R. Co.	75,000
Alabama and Tennessee R. R. Co.	225,000
Selma and Gulf R. R. Co.	40,000
Cahaba, Marion and Greensboro' R. R. Co.	25,000
Opelika and Oxford R. R. Co.	50,000
Montgomery and Eufaula R. R. Co.	30,000
	\$663,000

The interest has to be paid by these companies to the State Treasury, and as soon as the Tennessee and Alabama Central Railroad Company shall, in good faith, put to work in grading, bridging, &c., not less than two hundred hands, the interest, except \$25,000, is to be paid to said company as the work progresses, which grading, &c., must be completed and ready for the ties, rails, &c., within five years, at which time the several companies mentioned pay over, as a bonus, to the Tennessee and Alabama Railroad Company the \$663,000, which Railroad Company obligates itself by bonds satisfactory to the Governor, to finish and equip the 120 miles of road from Decatur to Montevallo within twelve months from receipt of this money. The \$25,000 reserved by the State from the interest on the fund is appropriated by the bill to improve the navigation of Colbert Shoals in the Tennessee river.

Opelika and Oxford (Ala.) Railroad.

We learn from the Chambers, Ala., Tribune, that the entire amount (\$175,000) of stock necessary to be raised before commencing work on this road, has been subscribed; and that the directors have engaged the services of C. P. ROGERS, Esq., an experienced engineer, to survey and permanently locate the road, Mr. Rogers will enter upon his duties immediately. The individual subscriptions, and the amount loaned from the three per cent. fund, reach the sum of \$250,000.

York River Railroad.

We learn from the Richmond Enquirer that the work on this road is progressing rapidly towards completion. The bridge across the Pamunkey, at the White House, will be finished in April, and the trains run through to the terminus, at West Point, in June. A splendid steamer will then be put on the line to Norfolk, making the run in a few hours.

Laurens (S. C.) Railroad.

At a recent meeting of the directors of this road, Dr. J. W. SIMPSON was elected President to fill the vacancy occasioned by the death of Col. James H. Irby, late President.

Cleveland and Mahoning Railroad.

MARTIN BENTLEY has been appointed Secretary and Treasurer of the Cleveland and Mahoning Railroad, in place of O. M. Burke, who retires in consequence of ill health.

FINANCIAL.

The closing cash prices at the New York Stock Exchange for each day of the week ending 21st March, 1860, were as follows:

Th. 15. F. 16. Sat. 17. M. 19. Tu. 20. W. 21.

FEDERAL STOCKS:—					
U. S. 5s, 1874	101½	102	101½	100½	---
STATE STOCKS:—					
Virginia 6s	94	94	94	94	---
Missouri 8½	81½	81½	81	81½	81.
Indiana 6s	88	88	---	---	---
Tennessee 6s, 1890	91½	91½	90½	90½	91
California 7s	89	---	---	88	88
Ohio 6s, 1870	106½	---	---	---	107
RAILROAD SHARES:—					
Chicago and Rock Isl. 65	65½	65½	66½	66½	65½
Clev. and Toledo	20	20	21	21	21
Galena and Chicago	60	60	61	62	62½
Hudson River	39	39½	39½	39	39
Illinois Central	61½	61	61	62½	62
Michigan Central	40	40	40½	41	39
M. S. and N. I. guard	18	18	19	20	20½
M. S. and N. I.	8½	9	9½	9½	9½
New York Central	74	75	75	75	75½
New York and Erie	9	10	10	10½	10
N. York and Harlem	9	8	9	9½	10
N. Y. and H. "pref."	34	34	34	35	35
Panama	133	133	134	134	135
Phila. and Reading	42	42	42½	42	42
MISCELLANEOUS:—					
Del. and Hud. C. Co.	96	97	97	---	96
Cumberland Coal Co. 15	15	---	15½	14	---
Pennsylvania Coal Co. 82	82	---	85	---	84
Pacific Mail S. S. Co.	94	94½	95	95½	97
Canton	20	20	20	20	20
Brooklyn Water W's	100	101	---	101	100½

The following are the closing prices in the London Market on the 6th March:

United States 5 p. c. red. '74	91	to	92
Illinois Central 6 p. c. red. 1875	77	to	79
Do. 7 p. c. red. 1875	81	to	82
Do. do. Fr. L'd red. '60	87	to	89
Do. \$100 shares, \$60 p'd.	45	to	48
Mich. Cen. 8 per cent. con. '60	85	to	90
Do. do. 1869	78	to	80
Do. do. 1st mortgage	---	---	---
(sinking fund), 1882	82	to	85
Do. \$100 shares	32	to	37
Michigan S. & N. Indiana 7 per ct.	---	---	---
(sinking fund) 1885	45	to	50
Do. \$100 shares	5	to	10
New York Central, 6 per cent. (sinking fund) 1883	85	to	87
Do. 7 per cent. 1864	91	to	93
Do. 7 per cent. (sinking f.) 1876	91	to	93
Do. \$100 shares	66	to	68
New York and Erie 1st mortgage 7 per cent. 1867	87	to	89
Do. 2d mortgage, 1869	80	to	82
Do. 3d do. 1883, assented	66	to	68
Do. Bonds, 1862, '71, '75 do.	28	to	32
Do. Shares, assented	9	to	10
Pennsylvania Central B'ds, 1st mort.	---	---	---
conv. 6 per cent.	87	to	89
Do. 2d mort. 6 per cent. sterling	92	to	94
Do. \$50 shares	35	to	37
Phila. and Reading B'ds, 6 p.c., 1860	85½	to	90
Do. 6 per cent. 1870	73	to	78
Do. \$50 shares	15	to	20

New York and Erie Railroad.

The annexed official figures of the earnings of this road since it passed into the hands of the Receiver, show that during four months it earned nearly enough net to pay the interest on its bonded debt, which is a better result than was anticipated:

The earnings and expenses of the New York and Erie Railroad, under the Receivership, from August 16, to Dec. 31, 1859, four and a-half months, were as follows, viz:

Earnings from August 16th, to December 31st, 1859	\$2,037,900 72
Expenses during the same time	1,359,415 20

Net earnings	\$678,485 52
Int't on mort. d't, 4½ mos.	\$473,011 87
Do. on unsecured d., 4½ m.	190,076 24
Rent of other roads, 4½ m.	48,901 00
	711,989 11

Deficit to pay interest on whole debt..\$33,508 59

The comparative statement for the same period, 4½ months of 1858 and 1859, is as follows:

	1858.	1859.
Earnings	\$1,942,487 05	\$2,037,900 72
Expenses	1,375,514 14	1,359,415 20

Net earnings	\$566,972 91	\$678,485 52
Interest on debt and rent of roads	708,173 00	711,989 11

Deficit.....\$139,200 09 \$33,508 59

Receipts from all sources from Aug. 16 to Dec. 31, 1859.....\$2,424,453 46

Payment on liabilities incurred previous to Aug. 16...\$1,109,418 19

Payment on liabilities incurred since Aug. 16th.....1,287,865 27

2,397,278 46

Balance on hand Dec. 31, 1859...\$27,175 00

Georgetown Water Works.

The Washington *Evening Star* gives us an interesting account of these Works, now nearly complete, under the supervision of Capt. M. C. METGES, U. S. Engineers, an officer of deservedly high reputation, in the department of design and construction. The Washington Aqueduct supplies Georgetown, on its route to the Capital, assisted for the elevation of one hundred feet above tide by the water pressure engines, built by Mr. H. R. WORTHINGTON of New York, with his usual care and ingenuity, in pumping machinery. They are reported as working with but ten per cent. loss of power.

The length of distribution in use, is 8.78 miles, of which 42,313 feet is four-inch, and 2,941 feet six-inch pipe. Part of this pipe, we understand, is of wrought iron, lined with cement, an improvement which is destined to take an important rank. There are 79 fire-plugs and 105 public hydrants.

The total cost of the works is stated at \$33,937; and this is to be paid in four annual instalments, taxed on the citizens, at the total levy of 60 cents per foot fronts. This system in four years gives the people of Georgetown *free water*, and is highly creditable to their enterprise, as this is the first modern city on record, endowed with a free supply.

Missouri Railroad Bill.

The bill granting additional aid to the railroads of this State, which has just been passed by the Legislature, appropriates \$1,420,000 to the Pacific road—of which \$280,000 is for the payment of the floating debt, and the remainder for the construction of the road, at the rate of \$50,000 for every five miles built; \$750,000 to the Southwest Branch, upon the dollar for dollar plan; \$966,000 to the North Missouri road—\$280,000 of which is to be applied south of the junction with the Hannibal and St. Joseph, and the balance at the rate of \$12,000 per mile to the road north of the junction; and \$1,000,000 to the Iron Mountain road, at the rate of \$10,000 per mile.

The St. Louis *Evening News*, from which we have derived the above particulars, adds:

It will carry the main trunk of the Pacific road to the western border of the State; the Southwest Branch to Springfield, and perhaps to Newton county; the Iron Mountain to the southern boundary, whence the people of Memphis and Arkansas stand pledged to prolong it to a connection with the southern system; and the North Missouri to a point from which the people of Iowa are prepared to carry it northward into their State. It adds

\$4,136,000 to the railroad appropriation of the State; but, by the time the additional bonds have been expended, it will have added not less than \$20,000,000 to the wealth of the State, and given us, completed, a system of roads, which, though costly, will be unsurpassed in comprehensiveness and beneficence.

FUNDAMENTAL IDEAS OF MECHANICS AND EXPERIMENTAL DATA by A. MORIN. —D. Appleton & Co. 8vo. pp. 450.

This is a translation from the admirable book entitled "Arthur Morin's *Leçons de mécanique pratique*" and is a most valuable contribution to our English Mechanical Literature. The translator, Mr. JOSEPH BENNETT, Civil Engineer of Brooklyn, has accomplished a task which few are competent to perform. To a thorough understanding of the subjects treated must be added an intimate knowledge of the French language. No translations are so difficult, as those of technical works of this kind. With few exceptions the terms of measurements have been reduced to the English standards so as to make the matter more conveniently available, and the mechanic and engineer will find no work more complete in practical formulae upon the branches treated. We entirely agree with the translator in his preface where he says: "The Mechanic and Engineer must look to practical formulae for ready aid in producing harmonious combinations of strength and dimensions" * * * *

"It is a matter of regret that so little has been done in our country towards establishing them." * * * "The recent calamity at Lawrence (Mass.) cries out in thunder tones against the merciless destruction of life, and most painfully shows that too much care and skill cannot be exacted of our constructors." * * * "It is to be hoped that our Government may yet take in hand a matter that cannot well be done at individual cost and thus institute a series of experiments, so that for the strains of wood and iron, for the properties of materials, and general experimental results, there may be found many an able native Barlow, Fairbairn or Morin to elicit valuable information and supply the great void existing in the testing of our own materials."

We are lamentably deficient in this respect, and if some one of our Congressional legislators would bring about the passage of a bill establishing a scientific Board for the purpose of experimenting upon our own various materials, and publishing the results in some convenient and available form, he would merit the gratitude of every engineer and mechanic in the country. No subject commends itself more to the attention of our Government than this, for nothing has a more intimate bearing upon our progress in all the great movements of the age in which we live.

Nashville and Northwestern Railroad.

In about a week the work of track-laying will be commenced on the Nashville and Northwestern (Nashville to Paducah) Railroad, and it is expected to have twelve miles completed and the cars running on the same by the first of July. The track-laying will be commenced at the depot of the Louisville and Nashville Railroad, so as to form an immediate connection with that road. A connection will also be eventually formed with the Nashville and Chattanooga Railroad.

A branch of this road is to go to Henderson, a short distance on the Ohio river below Evansville. It will furnish a southern outlet to the Evansville and Indianapolis road, which, we hope, will be completed at no very distant day.

Maryland Legislation.

The Legislature of this State adjourned on the 10th inst. Bills passed both houses, authorizing the city of Baltimore to endorse the bonds of the Northern Central Railroad Company to the amount of \$500,000; and releasing the Susquehanna and Tide Water Canal Company for the payment of compound interest on the debt due the State; also a bill authorizing the city of Baltimore to guaranty the mortgage bonds of the Western Maryland Railroad Company to an amount not exceeding \$250,000. The bill appropriating the balance of one million of dollars to the Eastern Shore Companies, alluded to in a former number, which was passed, proposes that the sum be paid from the surplus revenues of the State Treasury within the next four years.

Taxable Property in Pennsylvania.

The Board of Revenue Commissioners have fixed the aggregate valuation of taxable property in this State at \$569,049,995. Of this amount, \$563,577,795 is subject to a tax of 2.5 mills on the dollar; \$5,290,336 to a tax of one per cent., and \$181,864 to a tax of two per cent. The following is the valuation of the city of Philadelphia: Property subject to a tax of two and a half mills, \$164,556,282; to a tax of one per cent., \$2,780,793; to a tax of two per cent., \$59,650. The aggregate increase of the valuation of taxable property in Philadelphia, since the assessment of the last Board, three years ago, is \$4,417,072.

Lamothe's Iron Car.

Railroad companies desirous of making use of iron cars are referred to the advertisement in another column of E. W. Sargent, Esq., who is prepared to treat for the manufacture, or sale of the right to manufacture of cars built upon Lamothe's patent. We have previously described Lamothe's plan, and also a passenger car recently built upon it, now running upon the Boston and Worcester Railroad, and which has elicited high approbation from all parties who have examined it. It is a model of good workmanship, and tasteful design and finish. Iron cars can be built as cheaply as wooden, and there can be no doubt of their general adoption, particularly in the Southern States where the climate is destructive to wooden structures.

Pennsylvania Railroad Machine Shops.

The Harrisburg *Telegraph* says that the plans and specifications for the new machine shops of the Pennsylvania Railroad Company at that place have been prepared, and that their construction will shortly be commenced. One of the buildings will be three hundred feet in circumference, and calculated to hold eighty-five locomotives. The shops, when completed, will give constant employment to about one thousand workmen.

Illinois Southern Railroad.

The County Court of Pulaski county (Ill.) have subscribed \$50,000 in bonds to the Illinois Southern Railroad, to be expended in that county. This road will be of great advantage to Mound City and the country immediately adjacent.

The last rail of the connection between the Balt. and Ohio and the Marietta and Cincinnati Railroads, was laid at Belpre, opposite Parkersburg, on the 14th inst. Nothing but a short and convenient ferry by steamboat now separates Baltimore from Cincinnati by this southern and short line of railroad.

Cincinnati Stock Sales.

By KIRK & CHEEVER.
For the week ending March 20, 1860.

BONDS.	Per cent.	
Little Miami, 1st Mort.	68	85 and int.
Covington and Lexington, 1st Mortgage	78	"
" " 2d	78	66 "
Ohio & Miss., E. D., Construction	78	19 asked.
Cinc. & Ham. and Dayton, 2d Mortgage	78	84 and int.
" " 1st	78	"
Indianap. & Cincinnati, do.	78	75
STOCKS.		
Cincinnati, Hamilton & Dayton	Ex Div.	68a69
Columbus and Xenia		83
Indianapolis & Cincinnati		38
Little Miami		83 1/2

Railroad Earnings.

The February traffic return of the Baltimore and Ohio Railroad is as follows:

MAIN STEM.	
From Passengers	\$39,651 72
" Mails	7,893 33
" Express	4,881 85
" Tonnage	220,718 69
	\$273,035 59

WASHINGTON BRANCH.	
From Passengers	\$28,890 97
" Mails	1,000 00
" Express	1,250 00
" Tonnage	5,689 66
	36,830 63

N. W. VIRGINIA BRANCH.	
From Passengers	\$2,285 59
" Mails	866 67
" Tonnage	19,445 30
	22,877 55

Total earnings.....\$332,743 77

The following is a comparison of the revenue of the road for the months of February, 1859 and 1860:

	1859.	1860.
Main stem	\$247,319 49	\$273,035 59
Washington branch	34,427 94	36,830 63
N. W. Virginia branch	19,884 35	22,877 55
Totals	\$303,631 78	\$332,743 77
		303,631 78

Net increase, February, 1860....\$29,111 99

The following statement shows the business of the Philadelphia and Reading Railroad Company, for the month of February, 1860, compared with the corresponding month of last year:—

	1860.	1859.
Received from coal	\$102,795 91	\$95,869 25
Do. merchandise	42,807 88	37,578 80
Do. travel, etc.	26,237 68	24,379 18
	\$171,841 47	\$155,327 23

Transportation, road-way, dumpage, renewal Fund, and all charges	113,302 25	96,258 19
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Net profit for the m'th.	\$58,539 22	\$59,069 04
Do. for previous 2 mos.	162,490 58	157,313 01

Total net profit for 3 months	\$221,029 80	\$216,382 05
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The earnings of the Watertown and Rome Railroad for February were as follows:

	1859.	1860.
Passengers	\$8,314 95	\$9,082 83
Freight	9,416 38	9,903 26
Other sources	1,115 07	1,575 40

Totals	\$18,947 30	\$20,561 49
Increase		\$1,614 19

The earnings of the Scioto and Hooking Valley Railroad for February were \$7,805 34

Expenses	4,084 89
Net earnings	\$3,220 45

Railroads and Canals of New Jersey.

Abstract of Returns for the year ending Dec. 31 1859.

Names of Companies.	Share Capital.	Funded Debt.	Other Liabilities.	Cost of Works.	Earnings, 1859.	Expenses, 1859.	Div. p. c.
Camden and Amboy R. R.	\$1,500,000	\$6,882,000		\$5,709,637	\$1,886,194	\$1,031,907	12
Delaware and Bay Bridge Canal	2,298,400	688,000		3,928,834	492,198	157,086	12
New Jersey R. R.	3,749,000	688,000		3,717,885	1,025,682	382,072	10
Central R. R. of New Jersey	2,412,000	3,000,000		5,712,381	971,702	385,716	10
Morris and Essex R. R.	1,157,800	340,000		1,622,556	255,236	147,915	7
Paterson and Hudson R. R.	630,000	96,000		630,020	58,400	2,117	8
Paterson and Ramapo R. R.	248,225	20,000		350,000	26,617	2,117	
Belvidere Delaware R. R.	997,700	2,049,500		8,192,269	289,605	142,384	
Flemington R. R.	150,011	600,000		284,684	13,405	12,649	
Warren R. R.	1,024,600	92,600		1,625,312	210,685	116,876	6 1/2
Freehold and Jamesburg Agr. R. R.	173,225	600,000		221,877	38,887	18,616	
Morris Canal	2,200,000	528,775		2,748,041	312,708	146,187	7
Burlington and Mount Holly R. R.	100,000	20,000		1,200,000	21,796	16,801	5 1/2
Camden and Atlantic R. R.	657,351	1,006,800		1,625,312	152,155	85,702	
Millstone and New Brunswick R. R.	102,855	186,700		111,114	8,248	4,631	
Northern R. R.	154,167	25,000		365,344	34,061	25,649	
Sussex R. R.	180,146	200,000		390,108	15,344	11,976	
West Jersey R. R.	216,794	66,582		280,278			

Anthracite Coal Trade.

The Philadelphia *Mining Register* thus notices the several changes which have been made during the past year, with reference to the places of shipment of Lehigh coal, viz:

The actual abandonment of Trenton, whence the trestling from which the cars were unloaded into boats has been removed to South Amboy, and the virtual abandonment of Bristol, where the Lehigh Navigation Company have ceased to occupy the large wharf at the pool of the canal, heretofore rented by them. Coasting vessels would not penetrate to Trenton by canal from the New York waters, and coasting vessels will not ascend the Delaware above Philadelphia to take freight at Bristol, except at rates which more than cover the cost of freight and tonnage in canal boats from Bristol to Philadelphia. The trade, therefore, will be transferred from Trenton to South Amboy, and from Bristol to Philadelphia. The arrangements entered into by and between the two Schuylkill carriers give general satisfaction to all reasonable people interested, in any way, in the Schuylkill trade. And the understanding had with the New York companies, it is predicted, will produce results mutually advantageous to all parties en-

gaged in the production and transportation of anthracite coal.

Journal of Patent Law.

WHEN NECESSARY TO APPLY FOR A PATENT. PROTECTION GIVEN TO INVENTOR WHILE PERFECTING THE DETAILS OF HIS INVENTION.

The law gives to the inventor a prescriptive right to the use, manufacture and sale of his invention for fourteen years. This the law adjudges to be sufficient to adequately remunerate the inventor for his inventive talent, skill and industry. After the expiration of these fourteen years the Patent Laws contemplate the resignation of the patent by the inventor to the free competition of the public. They thus secure what is right and just to the inventor and at the end of the term demand what is equally right and just for the State.

Applying these principles, the law will not allow the Patentees to first part with their invention, or with the right to use their invention, afterwards secure a patent, and then by injunction restrain the parties to whom they previously gave the right to use it, from enjoying that right. It will, however, protect the inventor from any persons who fraudulently attempt to get possession of his invention before he has patented it, and while he is endeavoring to perfect the details of it.

The case of *Winsor vs. Kendall et al.* recently decided in the United States Supreme Court, illustrates the above points. This was an action for the recovery of damages for an alleged infringement by the defendants of the plaintiff's machine for manufacturing harness. One of the defences of the defendants, was that given by the act of Congress, passed March 3, 1839, and which reads as follows: "Every person or corporation who has or shall have purchased or constructed any newly invented machine, manufacture or composition of matter, prior to the application of the inventor or discoverer for a patent, shall be held to possess the right to use and vend to others to be used, the specific machine, manufacture or composition of matter, so made or purchased, without liability therefore to the inventor, or any other person interested in such invention."

In the support of the above defence, evidence was introduced upon the trial, tending to show that the plaintiff constructed a machine in substantial conformity with his specification, as early as 1846, and that, in 1849, he had several such machines in operation, on which he made harness to supply all such orders as he could obtain: that he continued to use these machines until he obtained his Letters Patent: that he repeatedly declared to different persons that the machine was so complicated that he preferred not to take a patent, but to rely on the difficulty of imitating the machine, and the secrecy in which he kept it. The defendants also gave evidence tending to prove that the first of their machines was completed in the autumn of 1853, and the residue in the autumn of 1854, and that in the course of that Fall the plaintiff has knowledge that the defendants had built, or were building, one or more machines like his invention and did not interpose to prevent them.

The plaintiff gave evidence tending to prove that the first machine built by him was never completed so as to operate: that this second ma-

chine was only partially successful, and improvements were made upon it: that in 1849 he began four others and completed them in that year, and made harness upon them, which he sold when he could get orders; that they were subject to some practical difficulties, particularly as it respected the method of making the harness, and the liability of the bobbin to get out of the clutch; that he was employed in devising means to remedy these defects, and did remedy them; that he also endeavored to simplify the machine, by using only one ram shaft: that he constantly intended to take Letters Patent when he should have perfected the machine: that he applied to his attorney for this purpose in February, 1853, but the model and specification were not sent to Washington till November 1854; that he kept the machine from the view of the public, allowed none of the hands employed in the mill to introduce persons to view them, and that the hands pledged themselves not to divulge the intention; that among the hands employed was one Kendall Aldridge, who left the plaintiff's employment in the autumn of 1852, and entered into an arrangement with the defendants to copy the plaintiff's machine for them, and did so, and that it was by Aldridge and under his superintendence, and by means of the knowledge which he had gained while in the plaintiff's employment under a pledge of secrecy, that the defendant's machines were built and put in operation; and that one of the defendants had procured drawings of the plaintiff's machine and had taken out Letters Patent for it in England.

At the Circuit Court the case was decided in favor of the plaintiff; but the defendants (upon exceptions to the charge of the judge) appealed to the Supreme Court. The following is the opinion of the appellate court.

DANIEL, J.—The defence must depend exclusively upon the proper construction of the section of the law above cited, and the application of that section to the conduct of the parties as shown by the bill of exceptions. It is undeniably true that the limited and temporary monopoly granted to inventors was never designed for their exclusive profit or advantage; the benefit to the public or community at large was another and doubtless the primary object in granting and securing that monopoly. This was at once the equivalent given by the public for benefits bestowed by the genius and meditation and skill of individuals, and the incentive to further efforts for the same important objects. The true policy and ends of the patent laws enacted under this government are disclosed in that article of the constitution, the source of all these laws, viz: "to promote the progress of science and the useful arts;" contemplating and necessarily implying their extension and increasing adaptation to the use of society. By correct induction from these truths, the inventor who designedly, and with the view of applying it indefinitely and exclusively for his own profit, withholds his invention from the public, comes not within the policy or object of the constitution or acts of Congress. He does not promote, and if aided in his design, would impede the progress of science and the useful arts. And with a very bad grace could he appeal for favor or protection to that society which, if he had not injured, he certainly had neither benefitted, nor intended to benefit. Thence, if during such a concealment,

an invention similar to or identical with his own should be made and patented, or brought into use without a patent, the latter could not be inhibited or restricted, upon proof of its identity with a machine previously invented, and withheld and concealed by the inventor from the public. The rights and interest, whether of the public or of individuals, can never be made to yield to schemes of selfishness or cupidity: moreover, that which is once given to, or is invested in the public, cannot be recalled or taken from them.

But the relation borne to the public by inventors, and the obligations they are bound to fulfill in order to secure protection from the former, and the right to remuneration, by no means forbid a delay requisite for completing an invention or for a test of its value or success by a series of sufficient and practical experiments; nor do they forbid a discreet and reasonable forbearance to proclaim the theory or operation of a discovery during its progress to completion, and preceding an application for protection in that discovery. The former may be highly advantageous as tending to the perfecting the invention: the latter may be indispensable, in order to prevent a piracy of the right of the true inventor. It is the unquestionable right of every inventor to confer gratuitously the benefits of his ingenuity upon the public, and this he may do either by express declaration or by conduct equally significant with language—such, for instance as an acquiescence, with full knowledge in the use of his invention by others, or he may forfeit his right as an inventor, by wilful or negligent postponement of his claims, or by an attempt to withhold the benefit of his improvement from the public until a similar or the same improvement should have been made and introduced by others. Whilst the remuneration of genius and useful ingenuity is a duty incumbent upon the public, the rights and welfare of the community must be fairly dealt with and effectually guarded. Considerations of individual emolument can never be permitted to operate to the injury of these. But whilst inventors are bound to diligence and fairness in their dealings with the public, with reference to their discoveries, on the other hand, they are, by obligations equally strong, entitled to protection against frauds or wrongs practised to pirate from them the results of thought and labor, in which nearly a life time may have been exhausted—the fruits of more than the *virginei annorum lucubrations*, which fruits the public are ultimately to gather. The shield of this protection has been constantly interposed between the inventor and the fraudulent spoliator by the courts in England; and most originally and effectually has this been done by this court in the cases of *Pennock & Sellers vs. Dialogue*, and *Shaw vs. Cooper*. The real interests of an inventor with respect to an assertion, or surrender of his rights, under the constitution and laws of the United States, whether it be sought in his declarations or acts, or in forbearance or neglect to speak or act, is an inquiry or conclusion of fact, and peculiarly within the province of the jury, guided by legal evidence submitted to them at the trial. The instructions from the Judge at the Circuit Court in this case we consider to be in strict uniformity with the principles hereinbefore propounded, and with the doctrines of this court, as declared in the cases of *Pennock &*

Sellers vs. Dialogue, and Shaw vs. Cooper. The decision of the Circuit Court is affirmed, therefore, with costs.

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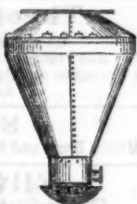
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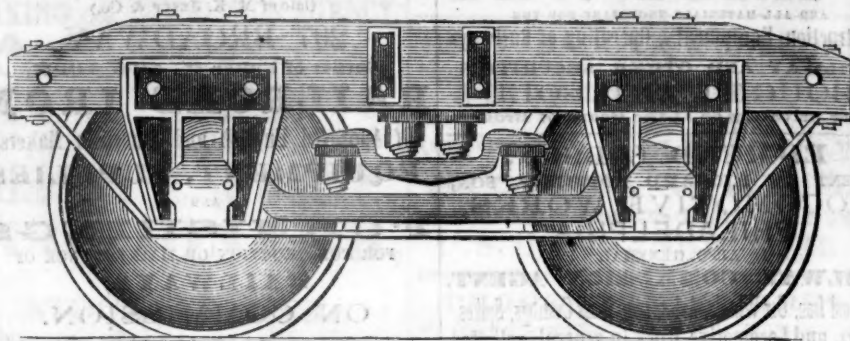
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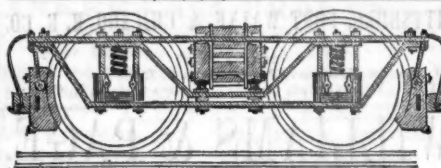
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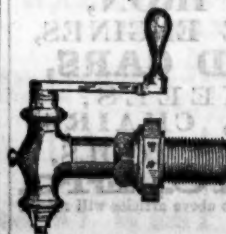
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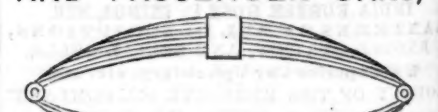
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